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HISTORY

OF THE

SUDAN CAMPAIGN.)

IN TWO PARTS, WITH A CASE OF MAPS.

PART I.

BY

COLONEL H. E. COLVILLE, C.B.

Grenadier Guards.

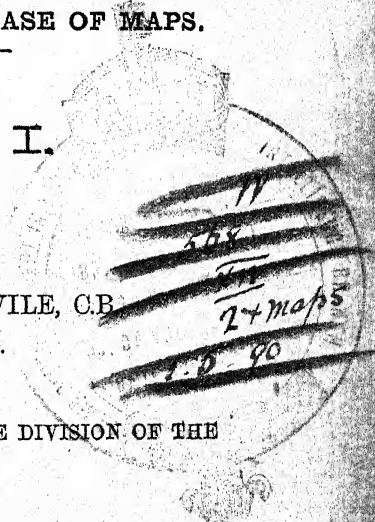
COMPILED IN THE INTELLIGENCE DIVISION OF THE
WAR OFFICE.

LONDON:

PRINTED FOR HER MAJESTY'S STATIONERY OFFICE,
BY HARRISON AND SONS, ST. MARTIN'S LANE,
PRINTERS IN ORDINARY TO HER MAJESTY.

And to be purchased, either directly or through any Bookseller, from
EYRE & SPOTTISWOODE, EAST HARDING STREET, FLEET STREET, E. C.; or
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PART I.

EVENTS LEADING UP TO THE NILE EXPEDITION
AND ITS HISTORY TO THE DEPARTURE OF
THE DESERT COLUMN FROM KORTI.

PART II.

FROM THE DEPARTURE OF THE DESERT COLUMN
TO THE CONCLUSION OF THE CAMPAIGN.

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PREFACE.

NUMEROUS causes have contributed to the delay in the publication of this work. The original MS. was completed and left Colonel Colvile's hands in March, 1887. It has since been subjected to much revision, consequent upon the suggestions of the various Officers and Departments to whom the proofs were referred. It is hoped that in its present form, it gives a faithful account of the Campaign.

HENRY BRACKENBURY,
Lieut.-General, D.M.I.

November, 1889.

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PART I.

EVENTS LEADING UP TO THE NILE EXPEDITION,
AND ITS HISTORY TO THE DEPARTURE OF
THE DESERT COLUMN FROM KORTI.

WITH APPENDICES AND A SKETCH MAP.

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Sketch Map to illustrate the History of the Sudan Campaign.

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United Service Institute
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PART I.

HISTORY OF THE SUDAN CAMPAIGN.

CHAPTER I.

THE TOPOGRAPHY OF THE SUDAN, AND SKETCH OF ITS HISTORY UP TO THE END OF 1883.

THE Sudan, or country of the Blacks, may be generally described as that part of Africa which lies within the Tropic of Cancer. The Egyptian Sudan, the only part of this tract with which we are at present concerned, occupies its eastern portion, extending from the Red Sea and western Abyssinian frontier to the western boundary of Darfur—*i.e.*, through about 18 degrees of longitude. It has a population of about fourteen and a quarter millions inhabitants of mixed race, the result of intermarriage between the aboriginal Negroes and the Arabs who overran the country in the first and second centuries of the Mohammedan era. This cross appears to have been a particularly suitable one, the result being a race possessing all the outward characteristics and mental attributes of the Arab combined with the endurance and brute courage of the Negro.

The Egyptian
Sudan.

The susceptibility of the Negro, however, to all emotional forms of religion has left its mark, and it is probably to a great extent owing to this strain in their blood that the Sudanese have attached themselves with such extraordinary fervour to the cause of Mohammed Ahmed. On this subject the late Lieutenant-Colonel Stewart remarks: "The Arabs, Dongolawis, Negroes, and others settled within the Arab zone are all Mohammedans of the Maliki school. This religion however, owing to the prevailing ignorance of the people, partakes mostly of an emotional and superstitious nature. Hence the enormous influence of the Fakirs, or spiritual leaders, who are credited with a supernatural power, and are almost more venerated than the Prophet. Similarly, the general estimation in which Dervishes are held, the miracu-

Emotional
character of
Sudanese
religion.

Isolation of
the Sudan
the cause of
its inde-
pendence.

lous power attributed to the repetition of certain words, such as 'Bismillah,' the influence of charms, the evil eye, &c."

A country in itself fertile and, especially in its southern parts, well watered, it is cut off from the world by arid and extensive deserts, the only practicable road through which, from a military point of view, lies in the narrow valley of the Nile, often a mere rocky gorge destitute of all but water. It is true that certain caravan routes connect it with the outer world, notably the so-called Arbain, or forty days' road, leading from Assiut to Darfur; the Suakin-Berber road; and the road leading from Abu Hamed across the Nubian desert; but these, although practicable for small bodies of men in time of peace, can hardly be regarded as military routes.

This peculiarity of situation, combined with the warlike character of the people and the unsuitableness of the climate to Northern constitutions, caused the Sudanese for many centuries to be left in peace, or rather in the undisturbed pursuit of their own intertribal wars.

1820.
Conquest of
the Sudan by
Mehemet Ali.

From the time of the Ptolomies to the second decade of the present century, the Nubian desert was fixed as the southern boundary of Egypt. In 1820, however, Mehemet Ali, finding the mercenaries, of whom he had made use for the destruction of the Mamelukes, a source of trouble in Egypt, cast about for some employment for them at a distance, and attracted by the animal and mineral wealth of the Sudan, determined to employ them by extending his dominions in that direction. In the autumn of that year, the expedition, under the command of the Khedive's son, Ismail Pasha, reached Dongola, and in a decisive action at Korti, in November, broke the power of the Mamelukes, who had settled in the province; it then pushed on to Khartum, following the river as far as Kirbekan, thence striking across the desert to Abu Ekleh from which point it again followed the river. At Khartum it was divided into two columns, one of which followed the Blue and the other the White Nile, Ismail himself accompanying the former column and conquering Sennar. In 1822 Ismail Pasha and his Staff started on their return journey and halted at Shendi, where they were the guests of the Meg, or King, surnamed Nemr, or the Tiger. From this person the Pasha demanded a large tribute of slaves and treasure. The Meg feigned compliance, but after making Ismail and his Staff drunk, piled fagots round the house and setting light to them burned the inmates alive.

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During the sixteen years which followed Ismail Pasha's death the Sudan was governed in turn by Mehemet Bey, Osman Bey, and Khurshed Pasha.

In 1838 Mehemet Ali himself visited the Sudan, and during the next few years three large expeditions were organised, having for their primary object the suppression of a rebellion which broke out in 1841 and lasted for two years, but resulting in the acquisition of much fresh territory. The country at this time was divided into seven Mudiriehs or provinces, viz., Fezokl, Sennar, Khartum, Taka, Berber, Dongola, and Kordofan.

1838.
Visit of
Mehemet Ali.

On the accession of Said Pasha a new system of government was organised, slavery was abolished, a postal service established, and the taxation greatly reduced; the improvement, however, was of a very temporary nature.

During the next few years several revolts took place, the most serious of which was that of 1865 in which 8,000 Negro troops, whose pay was in arrear, revolted in Taka.

The most important events of this period, however, were the explorations of Speke and Grant, and Sir Samuel Baker. The latter left Cairo in 1861 under the auspices of Said Pasha, and having tracked the Nile into the Albert Nyanza Lake, returned to be welcomed and supported by the new Khedive, Ismail Pasha, who had succeeded Said in 1863. Orders for the suppression of the slave trade were issued by the Khedive in 1863, and on Sir S. Baker's return journey in 1865 he found an Egyptian camp of 1,000 men established at Fashoda for this purpose.

Explorations
of Speke and
Grant and Sir
S. Baker.

In order to abolish the slave trade, the Khedive eventually determined to annex the equatorial provinces and open up the lakes to steam navigation. To carry out this mission he appointed Sir S. Baker Governor-General of the Equatorial Provinces, issuing a Firman on April 1st, 1869, whereby he gave him absolute power over all the country south of Gondokoro. Sir S. Baker left Khartum in February 1870, annexed Gondokoro in May, 1871, and established posts to within 2° of the Equator, returning to Cairo in August 1873.

1869.
Sir S. Baker
appointed
Governor-
General.

Besides Sir S. Baker's expedition to the Equator, two other expeditions were organised in 1870. One under a native of Darfur, named Helale, who seized some copper mines on the Bahr el Ghazal; and another under a Swiss, named Munzinger, who annexed the Senhit territory for the Egyptian Government.

On his return to Egypt in 1873 Sir S. Baker resigned his
(s.c.1)

1874.

Colonel
Gordon
appointed
Governor-
General.

appointment, and was succeeded in 1874 by Colonel C. G. Gordon, R.E., whose powers in 1877 were extended over the whole Sudan.

During his term of office, while doing his utmost to ameliorate the condition of the people, and promote the administration of justice, Colonel Gordon's chief energies were directed to the suppression of slavery, by cutting off the supplies at their source, in the neighbourhood of the equatorial lakes.

While Colonel Gordon was away in the far south on this mission, important events were occurring in the north and west. In order to follow them, however, it will be necessary to refer back to the year 1869, when the powers of the slave traders in the Bahr el Ghazal had become so great that they refused to pay their rentals to the Egyptian Government.

Zobair's
invasion of
Darfur.

In order to re-establish his authority in the province, and also with the object of conquering Darfur, the Khedive sent a small force which was met by Zobair Rahama, the chief of the slave traders, and destroyed by him. No further action appears to have been taken by the Egyptian Government until 1874, when an open rupture occurred between the slavers and the Sultan of Darfur and caused an invasion of the latter's territory by the former.

1875.
Co-operation
of Egyptian
Government
with Zobair.
Conquest of
Darfur.

The Egyptian Government determined to participate in this invasion, and, in 1875, organised an expedition which was divided into two columns, the command of one being given to Ismail Pasha Yakub, the Governor-General, and of the other to Zobair. The immediate result of this expedition was the death of the Sultan and the conquest of Darfur.

1878.
Gessi's
expedition.

Zobair, who was created a pasha for his services, proceeded to Cairo, and demanded to be made Governor-General of the new province. This request being refused, he instigated his son Suliman to seize the Bahr el Ghazal province. When this came to Colonel Gordon's knowledge, he, in July, 1878, despatched an expedition to the Bahr el Ghazal, under Gessi, an Italian, one of his most trusted lieutenants. After many delays and hardships, and five successful engagements against almost overwhelming odds, Gessi completely broke the neck of the rebellion on the 15th July, 1880, taking the whole of Suliman's force prisoners, and shooting Suliman himself and ten other ringleaders.

During the following six months Gessi remained in the Bahr el Ghazal as governor, and was most successful, both in his efforts at stamping out the slave trade and encouraging

commerce; but on the departure of Colonel Gordon, he resigned his appointment. He died at Suez on April 30th, 1881, from the effects of his hardships in the Sudan.

Colonel Gordon had proceeded to Cairo in August, 1879, and did not return to the Sudan. He was succeeded at Khartum by Rauf Pasha.

1879.
Rauf Pasha
succeeds
Gordon.

During the sixty years that had elapsed since its annexation by Mehemet Ali, discontent had been smouldering in the Sudan. After the departure of Colonel Gordon, the desire for independence began speedily to assert itself. The situation became such that but a spark was needed to set the whole country in a blaze, and this spark was supplied in Mohammed Ahmed, the boat builder and recluse.

Condition of
the Sudan
at the time of
the Mahdi's
appearance.

This man was born in the year 1843, in the district lying between Ordi (New Dongola) and Khandak, of a certain carpenter, named Abdullah, and his wife, Amina, names which correspond with those of the parents of the Prophet Mohammed, who was also surnamed Ahmed. His own name and that of his parents fulfilled the conditions of a prophecy which had announced that Islam was to be regenerated by force of arms by the Mahdi, whose names and those of his parents would be identical with those of the Prophet. Many stories are now told as to the extraordinary ages attained by different members of his family, and in one case as to the resurrection of an ancestor in his native village a year after he had been buried at Mecca; but it is impossible now to ascertain whether these legends were current before Mohammed Ahmed proclaimed his mission.

The Mahdi's
parentage.

There is little doubt, however, that from his earliest childhood, he showed signs of great capacity, and a strong leaning towards religious studies, and after a comparatively brief apprenticeship to his uncle, a boat builder in Sennar, he joined a religious school at Khartum, and afterwards another near Berber.

The Mahdi's
early years.

Then, having completed his religious education, he retired to the Island of Abbas on the White Nile, where by reason of his prayers and fastings, he soon attracted attention and became the recipient of many alms from the pious. Gradually acquiring wealth, he married daughters of several of the most influential Baggara* Sheikhs, and thus acquired a valuable connection throughout the country.

According to the prophecy already mentioned, the Mahdi

1881.
The Mahdi
declares
himself.

* Literally "cattle" tribes, or those whose property consists of cattle.

was to appear in the year 1300 of the Mohammedan era, or 1883 A.D. But in 1881 Mohammed Ahmed, having had a serious quarrel with the Mudir of Fashoda, on a question of taxation, and having openly defied the authorities, appears to have considered that the time had come to proclaim himself, and accordingly, towards the end of May in that year, he sent round a circular to his brethren of the Gelan Order of Dervishes, of which he was the local head, summoning them to meet him and consult with him. The result of this conference was that in the following August (the Mohammedan Ramadan, or month of fasting) he proclaimed himself as the expected Mahdi,[†] being then forty years old, or the same age as the Prophet Mohammed when he first declared his divine mission.

His mission, as set forth in his various proclamations, was to gain over the whole Sudan to his cause, then to march on Egypt, and having overthrown the heretic Turks, to establish the 1,000 years' kingdom in Mecca, and convert the whole world. To establish universal equality, universal law and religion, and community of goods.

All who opposed his mission were to be destroyed, whether Christian, Mohammedan, or Pagan.

August. 1
Attempted
arrest of the
Mahdi.

The insurrection of Mohammed Ahmed may be said to date from the 11th of August, 1881. On that date Rauf Pasha, the Governor-General of the Sudan, having previously failed by negotiation to induce Mohammed Ahmed to come in to Khartum, despatched 200 soldiers and one gun to Abbas Island to arrest him. The party was under command of Abu Saud, the Governor-General's Aide-de-Camp, who was also accompanied by two Adjutant Majors.

Its failure and
consequences.

On landing at daylight on the following morning, Ali Effendi, one of the Adjutant Majors, made the mistake of shooting down a harmless villager in the belief that he was the Mahdi. This act was immediately followed by a general rush, from all quarters, of Mohammed Ahmed's followers and a massacre of the troops, only sixty of whom escaped to their boat.

This occurrence not only added enormously to the prestige of Mohammed Ahmed, but put him in the position of fighting with a rope round his neck. He seems at once to have

* In this respect he did not carry out the conditions of the prophecy, which state that the true Mahdi will conceal his mission and that his divine nature will dawn upon the people without any effort on his part.

taken action and to have lost no time in sending out his emissaries to inform the people of his victory and to call upon them to join him, at the same time retiring to Jebel Gedir, beyond the Takalla mountains to the south of Kordofan, where he entrenched himself.

The news of this disaster caused something like a panic in Khartum, and Rauf Pasha realising the gravity of the situation, succeeded by the end of the month in concentrating 1,400 troops at Kawa, on the White Nile, under Mohammed Pasha Said, the Mudir of Kordofan. The concentration of even this small force almost denuded the principal towns of troops, and grave fears were entertained that insurrections might break out in them; consequently after a month's comparative inactivity the force was dispersed, having effected no good whatever.

Panic in
Khartum.
Action of
Rauf Pasha.

Mohammed Ahmed's retirement to the mountains appears to have lulled the authorities at Khartum into a false sense of security, for although Rashid Bey, the Mudir of Fashoda, made several applications to be allowed to attack him, his offers were refused. In December, however, this officer seeing what he believed to be a favourable opportunity, got together a force of 400 regulars and 1,000 Shilluk Negroes, and in spite of orders to the contrary, marched on Jebel Gedir, accompanied by a German named Berghoff, who held the post of slave inspector at Fashoda. He left Fashoda on the 4th of December, and after marching all the night of the 5th, arrived in front of the enemy's position on the morning of the 9th, when the men, seeing some wells, broke their ranks and rushed to the water. They were immediately attacked by the Arabs and nearly all killed, the Mudir and Berghoff being amongst the slain. This victory placed a quantity of arms, ammunition, and stores in the hands of the enemy.

December.
Defeat of
Rashid Bey
near Fashoda.

The increased prestige which this second victory gave to Mohammed Ahmed made it necessary for strong and immediate measures to be taken, and Rauf Pasha enrolled irregular troops from the Dongola, Shaikiyeh and Berber districts, which were supposed to be less disaffected than the others.

Rauf asks for
reinforce-
ments

While this enrollment was going on the insurrection was rapidly making headway. The Shilluks, exasperated at the loss of their Sheikh and comrades in Rashid Bey's disaster, were threatening revolt. Darfur had already risen; the Kababish, in the north of Kordofan, the Abū Ruf in Sennar,

Progress of
the
Insurrection.

and Bisharin on the Berber-Suakin road, were wavering in the balance, and in every part the emissaries of the Mahdi were busy preaching the Holy War.

In four months' time a force 4,000 strong was ready to march, and on the 18th of March, 1882, left Khartum for the Shilluk country, under command of Nubir Pasha Yusif, but owing to desertions and other causes it never proceeded beyond Kawa, where it remained inactive for several weeks.

May, 1882.
Abd el Kader
Pasha suc-
ceeds Rauf.

In the meanwhile, Rauf Pasha had been superseded as Governor-General by Abd el Kader* Pasha and had left for Egypt; Geigler Pasha, a German, and late superintendent of Sudan telegraphs, administering the government until the arrival of his new chief, which took place on May 11th, 1882.

Investment of
Sennar by the
rebels.

Taking advantage of the concentration of troops at Kawa, a force of 1,000 Baggara under a relation of Mohammed Ahmed, named Ahmed el Makashif, invested the town of Sennar. On the 6th of April the Mudir, Hussein Bey Shukri, made a sortie which was repulsed, and the enemy succeeded in following the troops into the town which they completely wrecked, killing over 100 soldiers and many foreign merchants. The troops, however, managed to gain possession of the Mudirieh, from the roof of which they kept up such a heavy fire on the enemy as eventually forced them to retreat, but only to the outskirts of the town, which remained in a state of siege until the arrival of Saleh Bey, who, on receipt of the news, had been despatched by Geigler Pasha from Kawa with 500 irregulars. After a desperate engagement which lasted throughout the day, he succeeded in defeating the enemy and raising the siege. The enemy retreated to Karkoj, above Sennar, on the Blue Nile, but were followed up towards the end of the month by 200 regulars from Khartum, some Bashi-Bazuks, and a large contingent of the Shukuriyeh tribe, which force they defeated with great slaughter at Mesalamia.

The siege
raised by
Saleh Bey.

Successes of
Geigler
Pasha
against the
Mahdiah.

On hearing of this defeat, Geigler Pasha himself took the field at the head of a large force, and on the 3rd of May gained the first victory of the Government over the Mahdiah, near Abu Haras, on the Blue Nile, chiefly owing to the

* All proper names of freemen beginning with Abd el refer to one of the attributes of the Deity. As Abd el Latif, the slave of the Compassionate; Abd el Zarif, the slave of the Beautiful, Abd el Kader, the slave of the Almighty, &c., &c.

† Above Sennar, on the Blue Nile.

assistance rendered him at the critical moment by Sheikh Awad El Kerim Bey Wad Abu Sin and his 2,000 Shukuriyeh horsemen. On the 25th of May he gained another victory near Sennar, after which he returned to Khartum where Abd el Kader had already arrived.

In the meanwhile the Mahdi, with a large following remained at Jebel Gedir, while 6,000 of his troops were concentrating round El Obeid, to which place 1,000 reinforcements were ordered by Abd el Kader Pasha. May Yusuf Pasha was also ordered to advance from Kawa, and on the 7th of June found himself in command of a large but disorganised force within touch of the enemy near Jebel Gedir. Here he was surprised while making a zeriba and completely routed, losing nearly all his arms and ammunition and a great quantity of stores.

Concentration
of Mahdiah
round El
Obeid.

June.
Defeat of
Egyptians
J. Gedir.

This was by far the most important victory that the Mahdiah had hitherto gained, and the stimulus which it gave to the movement was considerable, and rendered the position of the Government most critical. Abd el Kader Pasha lost no time in collecting troops from all parts. He withdrew three battalions of regulars from Galabat, Senhit, and Girri, raised two battalions of slaves, and collected about 8,000 Bashi-Bazuks, and by the end of July, 1882, had mobilised a force of from 12,000 to 13,000 men.

July.
Concentration
of troops by
Abd el Kader.

While this force was being collected a number of minor skirmishes took place, nearly all of which resulted in the enemy's favour, but the only important military event was the capture of Shatt, on the White Nile, by the Mahdiah, who put the whole of the male population to death.

Capture of
Shatt by the
rebels.

During the next two months the Government troops met with more success, first defeating the enemy at Bara, and for the time being raising the siege of El Obeid and allowing that town to be revictualled, and again on the 28th of August routing a rebel force near Duem, on the White Nile, with a loss of 3,500 killed.

August and
September.
Success of
Government
troops.

These successes had the effect of postponing for a time the advance of the Mahdiah on Khartum, but they also had the effect of causing the Mahdi to take the field in person. Towards the end of September some of his troops gained a decisive victory near Bara over Ali Bey Safti, who in command of 3,000 troops was marching to the relief of the town. The Egyptians lost over 1,100 men, and the same number of rifles, besides ammunition and stores; but the remnant of the force managed to make its way into Bara, and in co-operation

The Mahdi
takes the field
in person.
Defeat of
Egyptians
near Bara.

with the garrison made a sortie on the 25th of October, inflicting such a severe blow on the besiegers that many desertions began to take place in the Mahdiah ranks. To such an extent did this disaffection spread that it was generally believed that the insurrection in Kordofan was at an end, and when, towards the end of October, the Mudir of Darfur appeared at Omshanga with a large armed force, his proffered assistance was declined. Abd el Kader Pasha, however, telegraphed to Cairo for 10,000 reinforcements, stating that without this force the rebellion would spread to all parts of the Sudan, and that then a force four times as great as that for which he asked, would be required.

10,000 of
Arabi's men
sent to
reinforce the
Sudan.
Colonel
Stewart sent
to Khartum.

When this telegram was received the English were in occupation of Cairo. It was decided to comply with Abd el Kader's request with as little delay as possible. 10,000 of Arabi Pasha's officers and men were accordingly enrolled, and at the request of the Khedive several English officers were appointed to the staff of the force. By the middle of February, 1883, the last detachments of this force had left Egypt for the Sudan *via* Suakin. In the meanwhile trustworthy information concerning affairs in the Sudan being very deficient, the British Government sent Lieutenant-Colonel Stewart, 11th Hussars, to Khartum to make enquiries.

January, 1883.
Abd el Kader
takes the field.
Fall of Bara
and El Obeid.

While the reinforcements from Cairo were concentrating at Khartum, Abd el Kader Pasha took personal command of the troops operating between the Blue and White Niles, and leaving Khartum on the 2nd of January, 1883, proceeded to Mesalamia. The troops under his command were bad, and his officers ignorant and lazy, but he nevertheless scored several victories, and all seemed to be going well till the second week in February when news reached Khartum that Bara had fallen on the 5th of January, and El Obeid on the 17th of January. By these joint surrenders about 8,000 troops and at least the same number of rifles and five guns, besides ammunition and stores, and over 100,000*l.* in specie had fallen into the hands of the enemy.

In August, 1882, the Mahdi had advanced from Jebel Gedir and having overwhelmed and destroyed the army of May Yusif Pasha, received an invitation from the merchants and notables of El Obeid to march on that city, which he did with an army which is said to have been composed of 10,000 cavalry and 40,000 infantry. They were, however, only armed with swords and spears, as although

they had captured thousands of rifles on the destruction of Yusif Pasha's army, they had left them all upon the field.

As soon as he had opened the siege, the Mahdi was joined by the greater part of the inhabitants. This partial evacuation gave the troops an opportunity of restricting the circle of defence, and lines of intrenchment were made enclosing the Mudirieh, arsenal, barracks, and about seventy houses.

The garrison also succeeded, on the 8th, 11th, and 14th of September, in repulsing with great slaughter three desperate assaults by the enemy in force, thus giving him a lesson which he took to heart, for the Mahdiah never afterwards attempted the assault of a town until its garrison had been reduced by starvation.

At length, however, after a heroic resistance, El Obeid surrendered, the troops having suffered dreadful privations and many having died of starvation in the trenches. On the 18th of January, 1883, the Mahdiah entered the town, the garrison of which, utterly prostrated with famine, was incapable of offering resistance.

Mohammed Ahmed took up his residence in the Government House, and appointed a Governor of the town, but did not make any attempt to form a regular administration.

On the 13th of February Abd el Kader Pasha left Kawa at the head of three battalions of infantry, 600 Bashi-Bazuks, some Shukuriyeh horsemen, and some guns, and proceeded towards Sennar, in spite of direct orders which he had received from the Khedive to suspend all operations until the arrival of the English staff officers from Cairo. Hearing of his approach Ahmed el Makashif, who was again investing Sennar, raised the siege and came out to meet him, with a force of from 10,000 to 12,000 Arabs, but after a slight skirmish retired, making a stand in some bushy ground a few miles from Sennar, where Abd el Kader attacked them on the 29th of the month. The enemy fought with great determination, but after three hours severe fighting were routed with a loss of 2,000 killed, the Government loss being only 27 wounded. The cavalry pursued and rendered the rout complete. The enemy on this occasion used firearms for the first time, and Abd el Kader received a slight bullet wound in his neck.

After this very serious reverse, the Mahdiah split themselves up into three bodies, one of which under Abd el Ghaffir retired to Karkoj, another under Ahmed el Makashif took up a position at Jebel Shekhédi, about six hours west

The Mahdi
at El Obeid.

February.
Abd el Kader
raises again
the siege of
Sennar.

of Sennar; while the third came into Sennar and surrendered.

March.
Further
Egyptian
successes.

As soon as he was able to do so Abd el Kader followed up his victory, and on the 4th of March despatched Saleh Agha with 1,200 irregulars to attack Ahmed el Makashif. The result of this engagement was the total defeat of the enemy who lost 547 killed, while the casualties on the Egyptian side were only two men wounded.

Abd el Kader
superseded by
Hicks Pasha.

It was then Abd el Kader's intention to follow up the other body which had retired to Karkoj. But before he was able to carry this out he was superseded in his civil capacity by Ali ed Din Pasha, who arrived at Khartum on February the 20th, and in his military capacity, nominally, by Suliman Pasha Nyasi, but practically by Hicks Pasha, late of the Bombay Staff Corps, who held the rank of Major-General in the Egyptian Army. The former of these officers arrived at Khartum on the 20th of February, 1883, holding a commission as Commander-in-Chief, and the latter on the 7th of March as his Chief of the Staff, Suliman Pasha having been given to understand that he was to defer in all things to his subordinate, who was held responsible for the direction of all preparations and operations.

The first month after Hicks Pasha's arrival at Khartum was spent in imparting to the troops the elements of drill, in the knowledge of which they were sadly deficient.

April.
Hicks leaves
Khartum for
Kawa.

On the 3rd of April Hicks Pasha and his Staff left Khartum for Kawa, where a force of about 5,000 men had been collected, consisting of:—

5½ Battalions of regular infantry.
½ Battalion of Negroes.
5 Guns.
2 Nordenfelts, and
Some Bashi-Bazuks.

A reconnaissance having shown that the enemy were in force in the neighbourhood of Abbas Island, Hicks Pasha proceeded up the river on the 10th of April with a small force with the intention of seizing the ford at Abu Zed. But, although he succeeded in drawing the enemy inland, he was compelled temporarily to abandon his original project owing to want of fuel for his steamers; he succeeded, however, in taking possession of the ford on the 23rd of the month.

May.

On the 25th of May, Hicks Pasha, who was then in the

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neighbourhood of Marabieh, received information that he was about to be attacked in force. Being in a good position he determined to remain where he was, and on the morning of the 29th was attacked with considerable determination by about 5,000 of the enemy under Ahmed el Makashif, whom he repulsed with great loss, killing amongst others the rebel commander. This victory, besides greatly inspiring the troops, had the effect of pacifying Sennar and causing several important tribes, such as the Kababish, to enter into negotiations with the Government.

Defeat of
rebels by
Hicks near
Marabieh.

The operations, however, had also plainly shown that Hicks Pasha's position as the nominal subordinate of Suliman Pasha Nyasi was an impracticable one, and on the 13th of May he telegraphed to Cairo that unless he was put in undisputed command he would not be responsible for the success of the projected expedition to Kordofan. No notice being taken of this request he resigned his commission, but on the 22nd of August withdrew his resignation on Suliman Pasha's appointment as Governor of the Red Sea Provinces.

Difficulties of
Hicks'
position.

After holding a council of war at Khartum on the 6th of June, Hicks Pasha decided that the re-conquest of Kordofan was impossible without considerable reinforcements, and accordingly telegraphed to Cairo for 6,000 more men and 120,000*l.* to defray expenses. The Egyptian Government, after some delay, decided to push on the re-conquest of Kordofan, and to send 3,000 reinforcements and 40,000*l.* in lieu of the 6,000 men and 120,000*l.* asked for.

He asks
for reinforce-
ments.

Alluding to these reinforcements, Hicks Pasha telegraphed to Major-General Sir Evelyn Wood, Commander-in-Chief of the Egyptian Army, they "can only be collected by dragging from their homes and fields unwilling men, and sending them away in chains. These men are to be taken at once before an enemy, having been previously in no way organised. And with what kind of officers? Of course I can have no kind of reliance whatever on them."

Quality of
reinforce-
ments sent.

After great difficulties in collecting his transport, chiefly owing to lack of funds, Hicks Pasha was ready to advance at the beginning of September, 1883, and on the 9th of that month his force consisting of:—

September.
Hicks leaves
for Duem.

7,000 Regular infantry,
400 Mounted Bashi-Bazuks,
100 Cuirassiers,

4 Krupp field guns,
 10 Mountain (brass) guns,
 6 Nordenfelts,
 5,500 Camels,
 500 Horses, and
 2,000 Camp followers,

left Khartum for Duem which it reached on the 20th of September.

His choice of
 route to El
 Obeid.

It was Hicks Pasha's original intention to have followed the northern and more direct road from Duem to Bara, a distance of 136 miles, and thence to El Obeid, establishing posts on the way, to be supplied from the dépôt at Duem. This plan was, however, abandoned in consequence of the representations of Ali ed Din Pasha that water was much more plentiful on the southern and more circuitous route *via* the Khor Abu Habli, a distance of 250 miles. It was still, however, Hicks Pasha's intention to keep up his communications, but in this he was again induced to change his mind by the representations of Ali ed Din.

In his last despatch dated 3rd of October, 1883, he gave his reasons for this change of plan as follows:—

His last
 despatch.
 His reason for
 abandoning
 line of com-
 munications

“On leaving Duem on the White Nile to march by the Khor el Nil to Melbeis and Obeid, I decided that my communications should be secured by posts of 200 men each, left in strongly fortified positions at the following places:—

* * * * *

“At all these places I was informed water would be found. Large quantities of biscuits were to arrive at Duem, and as we were unable to leave a single camel at the base, 1,000 were ordered to be purchased and forwarded to Duem. His Excellency Ali ed Din Pasha had already at Khartum 300, and gave orders for the remaining 700 to be purchased and forwarded to Duem without delay.

“The biscuits would then, with ammunition and other stores, be pushed on to the front from post to post. Dépôts would be formed at each post, and in case of a reverse a line of retreat secured, the troops falling back upon these dépôts where we should be certain of finding supplies of food, ammunition, and water.

“We marched to Shatt and formed the first post and dépôt

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there; but before reaching Zeraiga, I was informed by the Governor-General of the Sudan that it was useless for me to expect any supplies to be pushed up from Duem, that soldiers left at the posts would not guard the convoys, in fact that they would be afraid to do so; that to ensure supplies being forwarded *an army* would be required with each convoy. The Arabs, although now absent from our line of route, would return after we had passed, and that they would be numerous, and the garrisons of the posts would not consider themselves strong enough to forward the supplies; that it would be dangerous; and I would find that they would not run the risk.

"The Governor-General requested me to abandon the idea of having this line of posts; to give up my line of communications and line of retreat and to advance with the army *en l'air* with fifty days' supply of food only, the Arabs closing in on our rear.

"I am naturally very averse to this, but if, as His Excellency assures me, it is a fact that the posts will not be supplied from the base of Duem, and supplies will not be forwarded through them, I should, in garrisoning these posts, be only weakening my fighting force without gaining any advantage. I have therefore called a council, have had the matter explained, and requested the members to record their opinions."

On the 24th of September, an advanced party seized the wells of Shatt, and on the 28th the army left that place and cut itself off from its communications. Hardly anything was known of the country into which it was venturing, beyond the fact that it was the driest in the Sudan. Hicks Pasha wrote, in an undated despatch: "We have depended upon pools of rain water for supply, which we have fortunately found. A reconnaissance made to-day ensures us water as far as Serakna. Guides' information is vague . . . the pools of rain water, the only supply, will dry up. Water not to be obtained by digging wells. I have no information regarding water between Serakna and Norabi, nor reliable information of the supply there. This causes me great anxiety. . . . The heat is intense."

On the 7th of October, the army arrived at a point 45 miles south-west of Duem, and there halted for some days to endeavour to ascertain what water supply was ahead. It was from this place that the last direct communication was received from it, in the shape of a letter from Mr.

Hicks cuts himself off from his communications.

1 Oct 24th

October.
The disaster
at Kasghil.

O'Donovan. On advancing to Kasghil, the army was led astray by the guides, who were Mahdi's men, and who, when they were sure that it was thoroughly lost in the bush, deserted it. After wandering for three days and nights without water they came upon a force of the enemy near Kasghil. But many hundreds had already died from thirst, and the remainder were too feeble to offer any determined resistance, and were soon despatched by the enemy. A brilliant charge was made by Hicks Pasha and his Staff, who all died fighting like men.

There is reason to believe that Ali ed Din Pasha was not present at this engagement, having with a large part of the force refused to leave Rahad, where he was surrounded and also destroyed.

Effect of
Hicks' defeat.

This victory, besides the enormous prestige which it gave to the Mahdi, placed the whole country south of Khartum at his mercy. The only army which Egypt had ready to put in the field was destroyed, and at Khartum were but 2,000 men to protect four miles of earthworks.

The Mahdi's
gains up to
date.

It may be interesting to note what munitions of war Mohammed Ahmed, who, in July, 1881, was a mere insignificant fanatic with a rabble following, without arms or ammunition, had gained in this period :—

Date.	Action.	Rifles Captured.
11th August, 1881..	Abbas Island..	120
8th December, 1881	J. Gedir ..	400
15th April, 1882 ..	Mesalamia ..	150
7th July, 1882 ..	J. Gedir ..	4,000
August, 1882..	Shatt..	150
September, 1882	Bara ..	1,100
5th January, 1883..	Bara ..	2,000
17th January, 1883..	El Obeid ..	6,000 and 5 guns
October, 1883..	Kasghil ..	7,000 and 14 guns
		<hr/>
		20,920 and 19 guns

CHAPTER II.

FROM THE DEFEAT OF HICKS PASHA TO THE COMMENCEMENT OF
THE NILE EXPEDITION.

THE annihilation of Hicks Pasha's army proved conclusively that the disaffected provinces of the Sudan could not be reconquered without military operations on a scale that the circumstances of the case did not permit. A policy of withdrawal was therefore decided upon.

General
Gordon's
mission.

But the retreat northwards involved in the abandonment of this vast territory, was an operation full of difficulty and danger. The Egyptian garrisons scattered over the country were isolated and in jeopardy. Some of the strongholds were hemmed in, some had already fallen. The nomad tribes peopling the provinces were now stirred up by religious fanaticism. The military successes of Mohammed Ahmed and his lieutenants had roused the population to enthusiasm, in the confidence that he was indeed the Mahdi. The tide of insurrection was spreading northwards, and already communications with Egypt and the Red Sea were imperilled. A strong man was imperatively needed to conduct the evacuation and to save the remnants of Egyptian authority from destruction, and the choice fell upon the late Governor-General of the Sudan, now Major-General Gordon, C.B.

General Gordon, after consulting with Her Majesty's Government, left London for Egypt on the 18th January, 1884. He was accompanied by Lieut.-Colonel Stewart, 11th Hussars, who had returned from Khartum, and who was given the status of Deputy Adjutant-General.

At Cairo General Gordon was appointed Governor-General of the Sudan. He left the Capital with Lieut.-Colonel Stewart on the 20th January, and proceeding *via* Korosko and Abu Hamed arrived at Berber on the 11th February. Here he formed a committee of defence, in consultation with Hussein Pasha Khalifa, Governor of the place, and he issued a Firman (given him by the Khedive) authorising the evacuation of the Sudan.

(s.c.1)

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February
18th, 1884.
His arrival at
Khartum.

On the 18th February he arrived at Khartum, where he met with a most enthusiastic reception.

General Gordon had originally intended to proceed to Berber *via* Suakin. Events in this part of the Sudan had at this time assumed a very serious aspect. To trace the causes which led to the Eastern Sudan becoming in the early part of 1884 the centre of military interest, it is necessary to go back a few months to the commencement of hostile activity in that quarter.

Affairs near
Suakin.
August, 1883.
The revolt of
Osman Digna.

A slave trader and general merchant named Osman Digna,* having been ruined by the suppression of the slave trade and hearing of the successes of Mohammed Ahmed, had determined to raise a revolt against the Government in his own district, and in August, 1883, had become so obnoxious that Tewfik Bey, the Governor of Suakin, summoned him to his presence at Sinkat,† where he then was. He arrived on the 3rd of August, but accompanied by about 150 armed followers, and demanded in the name of the Mahdi, the surrender of Sinkat and Suakin with all the arms and treasure they contained. These demands being of course refused, Digna attacked the barracks and the summer residences of the Suakis, spread over the plain. The inhabitants defended themselves and with the assistance of the troops‡ drove off the rebels after an hour's fighting, wounding Digna and killing 2 of his nephews and 63 of his followers.

October.
Investment of
Sinkat.

This defeat kept the Hadendowas quiet for some time, but by the 18th of October, Sinkat was again invested, and two officers and 156 Egyptian soldiers, who were on their way to reinforce the garrison, were killed by the Arabs in a defile about 20 miles from Suakin, and on the 5th of November, 1883, 500 Egyptian soldiers, accompanied by Commander Moncrieff, R.N., the British Consul at Suakin, were massacred by the Arabs near El Teb, while on their way to Tokar.§ By the end of the month the rebels had become sufficiently bold to attack Suakin itself, but on several successive days were repulsed.

Egyptian
disasters.

* Or more properly Dikna, a word which means ugly in the Hadendowa dialect. This name was given to him on account of the light colour of his father, who was the offspring of a Turk, or Levantine, and a Hadendowa woman.

† A hill station about 35 miles from Suakin.

‡ 100 in number, the garrison was afterwards increased to 200.

§ The penal settlement of Suakin, from which it is about 35 miles distant.

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On the 2nd of December, 700 black troops under Kassim Bey were cut to pieces at Tamai.

At about the same time, information was received that Digna had concentrated a force 7,000 strong on the Tamanib road, that Sheikh Taka, one of his lieutenants, had surrounded Sinkat with 11,000 men, and that the rebels at Tokar numbered 3,000.

Under these circumstances, it became imperative that reinforcements should be despatched from Cairo, and after some discussion it was decided to send an expedition composed of Gendarmerie, and commanded by General Valentine Baker Pasha. This force was composed of 2,000 infantry, 100 of whom were Turks, 520 cavalry, 80 of whom were Turks, and 100 volunteers from the European Police.

December.
Baker Pasha
sent to Suakin.
Composition
of his force.

On the 19th of December, Baker Pasha left Cairo and arrived at Suakin on the 23rd. He was to have supreme civil and military command in all parts of the Sudan which might be reached by his forces. He was to attempt to pacify the country between Suakin and Berber, but was only to resort to force after all other means of conciliation had failed. On the 28th of January, he landed at Trinkitat, the port of Tokar, and on the 3rd of February bivouacked with his force at a fort which he had constructed on the inland side of the morass which divides Trinkitat from the main land.

February,
1884.
Concentration
at Trinkitat.

On the following morning, all attempts at negotiations having failed, he advanced for the relief of Tokar with the following force :—

Baker's
advance for
Relief of
Tokar.

Egyptian cavalry	..	..	..	300
Turkish "	..	..	..	150
Alexandria battalion (Gendarmerie)	..			560
Cairo "				500
Massawa " (black troops)	..			450
Senhit "				421
Turkish infantry	..	..	..	429
Zobair's black troops	..	..	..	678
Egyptian Artillery	..	..	..	128
Europeans (Police)	..	..	..	40
Total	..	..	..	3,656

And 6 guns.

After advancing about three miles, the enemy were seen about 3,000 yards off, and the scouts at once began firing (s.c.1)

February 4th.

Baker's defeat
at El Teb.

wildly. The Turkish cavalry were then ordered to charge a small body of the enemy on the right flank, but seeing the scouts retiring, also turned tail and rushed back in confusion towards the main body. This at once became stricken with panic, and was unable even to form square.

The enemy, about 1,200 strong, then closed on the force and a scene of butchering ensued which has probably never been rivalled. An eye witness wrote, "inside of the square the state of affairs was almost indescribable. Cavalry, infantry, mules, camels, falling baggage, and dying men were crushed into a struggling surging mass. The Egyptians were shrieking madly, hardly attempting to run away, but trying to shelter themselves one behind another."

Gradually as the square thinned, the men escaped and fled, throwing away their arms and clothes, the rebels following them and killing them as they ran. The garrison which had been left at the fort, decamped at the sight of the first fugitives.

Baker Pasha and Colonel Sartorius vainly tried to rally the cavalry for a charge, but finding matters to have become perfectly hopeless, charged with their Staffs through the rebels, and gained the shore.

The Egyptian loss on this occasion was 112 officers and 2,250 men killed and wounded, besides the machine and Krupp guns, and 3,000 rifles.

This defeat made it necessary to abandon all hope of relieving either Tokar or Sinkat with Egyptian troops. The former garrison, although fairly well supplied with food, was running short of ammunition; the latter was already in the last extremities for want of food.

February 8th.
Fall of Sinkat.
Destruction of
Tewfik Bey
and his force.

On the 8th February Tewfik Bey, who had assumed command, despairing of succour and finding his provisions exhausted, determined to evacuate Sinkat, and attempt to fight his way to the coast. He accordingly spiked his guns, burned his camp, destroyed all the ammunition he was unable to carry with him and set out from the town with 400 men, encumbered with women and children. What happened subsequently is not accurately known, but all accounts agree that Tewfik, having refused all offers of capitulation or surrender, made a long and desperate fight for life, killing many of the enemy. He was, however, ultimately overwhelmed by numbers, his whole force being annihilated in a Khor about a mile and a half from Sinkat, with the exception of 30 women and six men.

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The news of Baker Pasha's defeat caused the greatest excitement in England, and on the 6th of February, 1884, it was decided to undertake the defence of Suakin, but beyond that no definite line of action was adopted.

Her Majesty's Government undertake defence of Suakin.

The First Lord of the Admiralty telegraphed to Rear-Admiral Hewett, who was in command of the British squadron at Suakin, that 140 marines from the "Orontes," at Suez, would be ordered to join him, and enquired what force he would require for the protection of Suakin. In reply to this Admiral Hewett asked to have the force of marines increased to 500, which demand was complied with.

On the 10th of February Admiral Hewett took over the supreme civil and military command at Suakin and issued a proclamation declaring the town in a state of siege.

Suakin declared in a state of siege.

On the 12th of February the British Government received a telegram from Admiral Hewett announcing the fall of Sinkat, and it was decided to despatch a British force to the Red Sea to endeavour to effect the relief of the garrison of Tokar.

Her Majesty's Government decide to relieve Tokar.

Orders were accordingly telegraphed to Lieutenant-General F. Stephenson, C.B., Commanding in Egypt, to organise an expedition for the relief of that garrison and to select his three best battalions for that purpose. He was informed that Major-General Sir G. Graham, V.C., K.C.B., would command it, and that Colonels H. Stewart, C.B., A.D.C., and Sir R. Buller, V.C., K.C.M.G., C.B., A.D.C., had been selected in England to command respectively the cavalry and infantry brigades, and Captain Wauchope, C.M.G., Royal Highlanders, to be Deputy-Assistant Adjutant-General. All other staff officers were to be selected as required in Egypt. The force would be augmented by a battalion of Marines, and by the troops on their way home from India in the "Jumna."

February 12th. Force for Suakin.

On receipt of these instructions General Stephenson at once proceeded to organise a field force, and on the 28th of February the following force was concentrated at Trinkitat:—

28th February. The British force concentrated at Trinkitat.

2,850 Infantry.	80 Royal Engineers.
750 Mounted troops.	6 Machine guns.
150 Naval Brigade.	8 7-prs. Royal Artillery.
100 Royal Artillery.	

On the afternoon of the same day the force marched to Fort Baker, the redoubt built on the land side of the morass, which separates Trinikatt Harbour from the main land.

Fall of Tokar.

In the meanwhile spies had reported the fall of Tokar, but the Government decided nevertheless to continue the operations and disperse the enemy.

General Gordon having expressed a wish that prior to any hostilities taking place, the rebel chiefs should be invited to confer with him at Khartum, Sir G. Graham was instructed to communicate with them to that effect. Accordingly, while the troops were moving to Fort Baker, Major Harvey, late Royal Highlanders, and Aide-de-Camp to Baker Pasha, accompanied by a flag of truce, took out the Arabic letter of which the following is a translation :—

General
Graham's
letter to the
Sheikhs in
revolt.

"From the General Commanding English Army to the Sheikhs of the tribes between Trinkitat and Tokar.

"I summon you in the name of the English Government to disperse your fighting men before daybreak to-morrow morning, or the consequences will be on your own heads. Instead of fighting with English troops you should send delegates to Khartum, to consult with Gordon Pasha as to the future settlement of the Sudan provinces.

"The English Government is not at war with the Arabs, but is determined to disperse the force now in arms in this neighbourhood and near Suakin.

"An answer to this letter must be left at the same place before daybreak to-morrow morning, or the consequences will be on the heads of the Sheikhs."

On the morning of the 29th of February, it was found that the letter had been taken from the staff to which it had been attached, but that no answer had been put in its place. Sir G. Graham accordingly advanced with his entire available force.

February 29th.
General
Graham's
victory at El
Teb.

He found the rebels entrenched at El Teb, where they had mounted the Krupp guns captured from Baker Pasha. To turn the entrenchments he moved to the right, stormed and carried them in flank, two successive positions being taken. Four Krupp guns, two brass howitzers, and one Gatling gun were captured, besides a quantity of arms and ammunition. The loss of the rebels was very heavy ; 2,100 bodies were buried in the positions captured, irrespective of those killed in the cavalry operations. The action lasted three hours, and the enemy showed desperate resolution and tenacity ; their strength was estimated to be about 6,000. The British loss amounted to 34 killed, or died of wounds, and 155 wounded. The cavalry made some dashing charges and their loss was heavy.

A summons was sent through prisoners to the rebel chief at Tokar to make submission on the 2nd of March, and the terms previously offered were repeated.

The march was continued on the following morning to Tokar, which was reached without any further fighting. On the 4th of March, Sir G. Graham and his force returned to Trinkitat, bringing with them the inhabitants of Tokar. On the following morning the force embarked for Suakin where the Government had determined to concentrate it, with a view to giving effect to a proclamation issued by Sir G. Graham and Admiral Hewitt, denouncing Osman Digna and calling on the rebel chiefs to submit.

Relief of
Tokar.

No answer having been received to this proclamation, another was issued on the 8th of March, warning the Arabs of Sir G. Graham's intention of marching on their camp at Tamai, and again urging them to submit. In answer to this a defiant reply was received, signed by a large number of Sheikhs.

On the 13th of March, the force which had been concentrated at a zeriba formed by Baker Pasha, about eight miles from Suakin, advanced on Tamai and bivouacked about 1,400 yards from the enemy's position, whence they were harassed throughout the night by a dropping fire which, however, did not cause many casualties.

At 8.30 a.m. the following morning the force advanced in two squares. On arriving at the edge of the ravine in which the enemy was concealed, the 2nd Brigade was suddenly attacked by a great mass of Arabs, from the front and right flank, which for a moment made it fall back in some disorder, and allowed the enemy to capture the machine guns, not, however, till they had been locked by the officers and men of the Naval Brigade, who stood by them to the last. This retirement also left a battery of four guns under Major Holley, R.A., unprotected, but although assailed by crowds of the enemy, officers and men stood firm to their guns, mowing down the advancing Arabs with inverted shrapnel.

March 13th.
General
Graham's
victory at
Tamai.

The 1st Brigade was also attacked at about the same time, but stood firm, and by its steady fire did great execution. At the same time the cavalry moved up to protect the left flank of the 2nd Brigade which soon rallied and captured its machine guns.

After this, there was no more serious fighting, and the enemy retreated sullenly, passing through the camp and village of Tamai, which were occupied by the 1st Brigade by noon.

Occupation of
Tamai.

The strength of the enemy was estimated at about 12,000, and their loss is put down at 2,000 killed.

The British loss was 5 officers and 104 men killed and 8 officers and 104 men wounded.

On the following day, Osman Digna's camp was burned, and the British force returned to Suakin.

On the 17th the following summary of the position of affairs and of his plans for further operations was telegraphed home by Sir G. Graham.

State of affairs
at Suakin.

"Present position of affairs is that two heavy blows have been dealt at rebels and followers of the Mahdi, who are profoundly discouraged. They say, however, that the English troops can do no more, must re-embark and leave the country to them. To follow up these victories, and bring waverers to our side, we should not proclaim our intention of leaving, but rather make a demonstration of an advance towards Berber, and induce a belief that we can march anywhere we please.

"I propose, therefore, making as great a show as possible without harassing troops. A strong battalion with regiment of cavalry advances to-morrow to Handub, and thence a reconnaissance will be made along the Berber road."

22nd March.
Recon-
naissance
on Berber
road.

This reconnaissance was carried out by Colonel H. Stewart as far as Tambuk on the 22nd of March. No armed Arabs were seen, the flocks and women were down at the wells and the country presented the appearance of being perfectly peaceful. On the same day a caravan of pilgrims from Central Africa arrived at Handub, having been fourteen days on the march from Berber. They reported the road perfectly safe and that they had only met on it a few unarmed men tending their flocks. Sir G. Graham having foreseen that his success must tend to this result, had telegraphed on the 5th of March to Sir F. Stephenson, suggesting that General Gordon should be asked if he would recommend an advance on the Berber road, and if so, how far he would be prepared to co-operate. In reply to this question, General Gordon telegraphed on the 7th of March, "The Mahdi has attempted to raise the people of Shendi by means of an emissary. Should he succeed we may be cut off. I think it therefore most important to follow up the success near Suakin by sending a small force up to Berber" and on the 10th "should the telegraph line be cut, I have told Hussein Pasha Khalifa* to send scouts out, and himself to meet at O-Bak the forces that might be advancing from Suakin. I

Gordon
reports insur-
rection to be
spreading
north of
Khartum.

* The Mudir of Berber.

shall detail those steamers which can pass the cataracts, to remain at Berber."

In forwarding Sir G. Graham's telegram, above referred to, to the Secretary of State for War, Sir F. Stephenson telegraphed, "I am not prepared to recommend Graham's force marching to Berber, owing to scarcity of water on road."

Sir F. Stephenson averse to advance on Berber.

Sir G. Graham, however, did not abandon all hope of being allowed to carry out this march, and at his request Colonel H. Stewart prepared a scheme for the advance of the mounted troops to Berber. When, in the middle of March, the news from Khartum began to grow more serious, the question of this proposed movement was further discussed. Sir F. Stephenson and also Sir E. Wood gave it as their opinion that the undertaking, although involving very great risk, was possible; but Her Majesty's Government decided that the operation should not be attempted.

Her Majesty's Government decide to wait.

An advance on Tamanib was, however, sanctioned in the hope that after crushing Osman the road to Berber might be opened by negotiations.

On the 27th of March, Sir G. Graham's force occupied the village of Tamanib, which after some desultory firing was evacuated by the enemy. Having burned the village Sir G. Graham withdrew his force, and on the 3rd of April embarked with his staff for Suez. The 3rd Battalion, King's Royal Rifle Corps, and a battalion of Royal Marines were left as a garrison. The Rifles were withdrawn in May, two battalions of the Egyptian Army being sent to take their place; at the same time Major Chermiside, R.E. (Lieutenant-Colonel, E.A.) was appointed Governor.

March 27th.
Occupation of Tamanib.
Withdrawal of British forces.

While the British troops were withdrawing from Suakin, affairs at Khartum were becoming daily more alarming. Communication with Sennar (whence the grain supply of Khartum was drawn) was cut off, and the rising foretold by General Gordon at Shendi had taken place, thus seriously interrupting his communications with Berber.

Khartum cut off from Sennar.

Matters after this became rapidly worse to the north of Khartum. Early in May Berber was invested by rebel forces. Hussein Pasha Khalifa begged for help, which could not be given him. On the 26th May, 1884, the town surrendered, after a short and feeble resistance, thus cutting off Khartum completely from the world, and taking away the main reason for an advance along the Suakin-Berber road.*

May 26th.
Fall of Berber.

* It may be assumed that after the fall of Berber the conditions of a march from Suakin to that place, would have been similar to those of the march from Korti to Metemneh, with these differences; that the whole

namely, the maintenance, in a good strategical position of a friendly town on General Gordon's line of communication.

The idea of a British expedition for the relief of General Gordon, may be said to date from April, 1884. Although no actual necessity for such an operation had yet arisen, Her Majesty's Government had already before the fall of Berber, determined to obtain the opinions of military authorities as to the route that should be followed in the event of affairs on the Nile assuming a more critical aspect.

Enquiries
as to routes
for the relief
of Khartum.

In a memorandum on this subject, addressed on the 8th of April to Lord Hartington, the Secretary of State for War, Lord Wolseley wrote as follows:—

"If the Government finds it necessary to send a military force to Khartum this autumn, for the purpose of relieving that place and carrying off the Egyptian garrison and servants of the Khedive's Government, now there under the orders of General C. Gordon, C.B., I think the plan of operations should be framed with a view to place in the field, in the neighbourhood of Shendi, a force of British troops, the minimum effective strength of which should be as follows:—

April 8th.
Lord
Wolseley's
scheme for
relief of
Gordon.

	Men.
1 Regiment of English Cavalry on native horses	400
Mounted Infantry on native horses or camels	450
2 Guns, Horse Artillery, native horses ..	50
1 Battery of camel guns, 7-pr. screw guns ..	100
1 Company Royal Engineers	100
2 Brigades of Infantry, about	5,000
Departmental Corps, about	400
Total	6,500

"I have named Shendi because it may be assumed that as long as Berber and Dongola are held, as at present, by troops in the Khedive's pay, a force advancing to the relief of General Gordon at Khartum need not anticipate any serious fighting until Shendi, or its district, is reached.

distance between Suakin and Berber would have been considerably longer; that the distance from O-Bak, the last well on the road, to the river at Berber was 58 miles, against 24 miles from Abu Klea to Metemneh; while the O-Bak wells are small and bad, those at Abu Klea are relatively large and good; that Berber is 95 miles further from Khartum than Metemneh; that a difficult range of hills about 4,000 feet in height has to be traversed, the known passes through which are 2,700 feet above sea level; and finally, that, owing to the time the march would have taken and to the fact that the concentration of a force at Suakin could only have one objective, the operation could not have partaken of the nature of a surprise, and that, not being menaced from any other points, the Dervishes could have concentrated at Berber.

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"In my opinion, this force should be exclusively British. It is very doubtful if even the very best of our Indian regiments would stand the charges of the Arabs, such as those which our troops had recently to encounter near Suakin. Then, again, Indian regiments take the field encumbered with numerous followers, and in operations through desert countries every additional mouth to feed is a matter of consequence, especially when the mouth is not that of a fighting man. Every officer of the Indian army employed, requires several servants, and as you can only secure his services by giving him the pay he is entitled to when in India, his presence with an army, the officers of which only receive English pay and allowances, gives rise to heart-burnings, discontent, and complaints against the niggardliness of the Home Government. If, however, for political reasons, it should be thought necessary to employ some Indian battalions with this force, then I would say send one battalion of Punjab troops with each of the two Infantry brigades, and send 100 Madras Sappers.

"Before attempting to enter into any detail, it is necessary first to consider the route to be adopted, as on that decision depend the most important considerations.

"There are three lines of advance that must be considered, having respectively as their immediate base or starting point, Massawa and Suakin on the Red Sea, and Wady Halfa on the Nile.

"I have named Wady Halfa as the starting point or base for any relieving force intended to reach Khartum by the valley of the Nile, because the Nile, even when low, presents little obstacles to the collection of the troops, stores, &c., required, at that place, and at full Nile no obstacles at all.

"The two last-named routes pass directly through Berber, and the first very near it, striking at the Nile at the point where the Atbara River joins it. There is a fourth route by which it would be possible to march a small force from Massawa to Khartum, *via* Kassala—Girri—Kedaref—Abu Haras, and from thence by the Blue Nile to Khartum, but the difficulties of water and transport would be so very great for an English force of the strength I have named above that I think all consideration of it may be dismissed. The distance from Massawa to Abu Haras on the Blue Nile measured along the line of telegraph is 513 miles (say 560 miles by road), which would take at least 10 weeks, the road being very difficult at several places. From Abu Haras to

Khartum, 120 miles, boats and possibly steamers from Khartum might enable the force to reach the neighbourhood of that place, as a compact body ready for action, in nine or ten days. However, as I have already said, the difficulties of transport and of water on the greater part of this distance justify me in dismissing all further consideration of this route.

"The distances from Berber of the three bases I have named are as follows :—

	Miles.
No. 1. Massawa to junction of Atbara with Nile near Berber.. ..	603
No. 2. Suakin to Berber	245
No. 3. Wady Halfa to Berber.. ..	666

"Let us now examine the relative difficulties of each route, beginning with No. 1.

"Massawa to the neighbourhood of Berber.

"From Massawa to Gos Rejeb on the Atbara River the land march would be 383 miles measured along the line of telegraph, say about 400 miles by road. Ranges of hills have to be passed, spurs of the Abyssinian mountains, which present serious difficulties, and until the bed of the Atbara River is reached at Gos Rejeb, water for a force of the strength proposed would always be a difficulty, a very serious one at many places. In the middle of September the Atbara ceases to exist as a river, but the pools of water along its bed would, I believe, be sufficient for the force to be employed. It would take that force seven weeks to reach Gos Rejeb. To carry the provisions it would require, for those seven weeks alone, about 5,000 camels, not making any allowance for the conveyance of baggage, camp equipment, hospitals, ammunition, &c. From Gos Rejeb to the junction of the Atbara and Nile would be a march of nearly four weeks, making up nearly eleven weeks as the time required for the troops starting from Massawa to reach the neighbourhood of Berber. Given the necessary number of camels, this operation is possible, and would be, as far as any present information goes, an easier and a more satisfactory undertaking than the march from Suakin to Berber, along which route small detachments could alone be moved daily.

"Suakin to Berber.

"No. 2. The water difficulties are so great along this route, that not more than 300 cavalry or 400 infantry could move along it daily between the several places where drinkable water is at present obtainable. Of course, more wells could be sunk, and the water supply generally improved, but this would require time, and would be difficult to arrange for. Our recent experience has shown us the warlike character of the tribes living about it; their hostility would render the march of small detachments along it extremely dangerous. The last 100 miles before reaching the Nile at Berber is across a desert where water is to be found, one may say, only at the half-way station of O-Bak. If the Suakin-Berber road were safe, of course the force might be pushed over it in small detachments; but as it is now, the march of such a force as that contemplated, by this route, would be an extremely difficult and dangerous operation.

"Wady Halfa to Berber.

"No. 3. Although much longer than either of the other two routes, it has, in my opinion, numerous advantages over them. In the first place, an ample supply of good drinking water, the most serious want in a tropical and desert region, is always at hand. Then again the difficulty of transport is reduced to very narrow limits.

"I would propose to send all the dismounted portion of the force up the Nile to Khartum in boats, as we sent the little expeditionary force from Lake Superior to Fort Garry on the Red River in 1870. That force had to traverse a desert region, destitute of supplies, for a distance of 600 miles, taking provisions with it for three months in boats. It had to pass over a range of hills (800 feet where we crossed them). I find the difference in level between Wady Halfa and Berber is about 720 feet, but there is no descent, whereas in the Red River Expedition we had to mount up 800 feet, and go down the other side of the hills (about 600 feet) to Fort Garry. Of the total distance by river from Wady Halfa to Berber (666 miles) 224 miles of that distance is navigable by steamers at one stretch, and a railway is finished for 33 miles, and only requires the rails to finish 22 miles further. There are also two stretches of about 70 miles each, easily

navigable by light draft steamers at high Nile, and by ordinary sailing boats. In fact, there would only be about 200 miles of difficult navigation between Wady Halfa and Berber.

"Remembering the great superiority of river over land transport, the ease with which stores of all sorts are carried in boats, the great distance, comparatively speaking, that can be traversed daily in boats, and the vast saving that there would be in expense, I have no hesitation whatever in saying that the river route from Wady Halfa to Khartum is infinitely preferable to any other.

* * * * *

"To carry out this operation, garrisons for Wady Halfa, the southern end of the Wady Halfa railway, Hannek, Old Dongola, Merowi, and Abu Hamed, should be found by General Wood's native army; at least four battalions of Egyptians would be required for these garrisons.

"It would be a great assistance in carrying out this operation if a strong Naval Brigade were associated with the military force employed, but it could only be usefully employed on the distinct understanding that it was to be completely under the orders of the General commanding the expedition, as a divided command would be fatal to success. Knowing from long experience what the Navy can do upon such occasions, and the spirit which animates all ranks during such an expedition, I would regard their co-operation as invaluable, but I am sure that any General employed would prefer to dispense with their assistance, unless the Naval Brigade to be employed was to be entirely under his command.

"I reserve all details for a further paper, to be written when I have seen the reports on the navigation of the Nile above Assuan, and on the nature and number of native boats available."

After perusing this memorandum, Lord Hartington asked, "Is there no point on the Nile between the southern end of the Wady Halfa railroad and Berber where further progress in boats becomes impossible?"

To which Lord Wolseley replied on the 14th of April:—

"To those who do not know what was done by the men of the Red River Expedition the possibility of reaching Berber in boats may well be doubted. Sir Redvers Buller took part as a Captain commanding a company in that expedition; tell him to study this question and state his opinion.

April 14th.
2nd Memo-
randum by
Lord Wolse-
ley.

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"The cataracts on the Nile are only what are called rapids in North America. They are without doubt very serious and very difficult rapids. During our 600 miles of journey to the Red River, we had not only to ascend and descend very great rapids, but several great waterfalls—one was actually a few feet higher than Niagara. Yet we did not lose a man drowned during the expedition.

"My proposal would be to complete the Wady Halfa railroad to 100 miles—it is now constructed for a distance of 55 miles, which would leave 45 miles to be made. Even this I do not regard as absolutely essential, but it would be of great assistance, and would reduce the time in which the journey could be accomplished, as well as the labour devolving upon the men. This 45 miles of railroad made, there would only remain really 140 miles of river presenting any serious difficulties.

"Of those difficulties we have no positive information, but what we do possess on the subject, leads me to believe that all the boats of the expedition could be taken up every cataract (rapid) in that distance, when the river was full. If they could not be so taken up, they should be portaged as we portaged our boats dozens of times in 1870.

"We should of course have camels with the expeditionary force who would march with the Cavalry along the banks. These camels would portage the stores round any rapid required, the boats and small steamers being hauled over if necessary on rollers, to be carried for that purpose in the boats. This work should, if possible, be done by moonlight.

"The more I consider the difficulties and the hardships and danger to health to be encountered on both the discussed routes, the more impressed I become with the advantages of the Nile route in preference to the land march from Suakin to Berber."

Lord Wolseley further stated in this second memorandum, that he considered the 15th of November to be the latest date up to which General Gordon could hold out at Khartum, and that preparations should be made with a view to arriving there before that date. In order to do so he considered that the force should not be at Berber later than the 20th October, and that, if the Government decided on the Suakin route, the relieving force should rendezvous there on the 1st September.

Lord Wolseley considers 15th November, 1884, as latest date to which Gordon can hold out.

Gordon in
favour of Nile
route.

Although General Gordon, in his earlier telegrams, had strongly advocated the despatch of a small force from Suakin to reinforce the garrison of Berber, he never appears to have contemplated the possibility of a relief expedition following the Suakin-Berber route after the fall of the latter town, and frequently impressed on the government that the Nile route from Wady Halfa was the only practicable one.

Sir F.
Stephenson in
favour of
Suakin-Ber-
ber route.
Sir E. Wood
of Korosko-
Abu Hamed
route.

Sir F. Stephenson on the other hand was in favour of the Suakin-Berber route, and on the 4th of May, 1884, addressed the following telegram to the Secretary of State for War:—

“Propose Suakin route; Wood prefers Korosko desert. Nile throughout route impracticable. Kassala undesirable. Force requisite should consist of 10,000 men, English or Indian. Wood can furnish 2,000 men for line of communications, and two batteries. Best time for expedition to start October. Wood says for Korosko earlier, August. For Suakin, early September. When expedition decided upon, it would be very important to make decision public here to secure wavering tribes, and thereby facilitate transport. Same force would be required to withdraw Gordon as to have relieved garrison.”

May 5th.
Sir F.
Stephenson's
memo-
randum.

And in a fuller report on the subject written on the 5th of May, he gave his reasons for arriving at this conclusion as follows:—

Nile Route.

“The Nile route, as far as Assiut, 220 miles. Troops and stores of all kinds could move by rail, or after rising of Nile, by river. From Assiut to Assuan there is a good supply of steamers of the smaller class and barges available. Soon after the rising of the Nile is felt there, that is about the second or third week in July, the larger class of steamers could go up. This portion of the route, Assiut to Assuan, could be traversed in 14 days; distance about 320 miles.

“At Assuan, the 1st Cataract, about six miles long, troops and stores would have to be disembarked and conveyed by rail to near Philæ, south end of cataract, where there are now available three steamers only (one being a small tug), which could not be increased in number until near the period of high Nile, that is towards the beginning of September.

“From Assuan to Wady Halfa, 2nd Cataract, the Nile may be considered navigable at all seasons; distance 210 miles.

"An interval of about 180 miles to Hannek, 3rd Cataract, then occurs; during which the Nile is practically unnavigable, according to the best accounts, at any period of the year.*

"The whole of the remaining distance to Khartum, 680 miles—860 in all from Wady Halfa—would have to be undertaken by march route along the side of the river;† this would entail, until cold weather set in, providing a camel to carry every infantry soldier, or at all events one for every two, together with camel transport for stores of all kinds, including tents; and for this service at least 4,000 camels would be required (including transport) for every 1,000 men.

"The time required to traverse these 860 miles would be about 100 days.

"There would be an insufficiency of food on the road for the number of camels required.

"The same remark applies to the cavalry horses and battery mules.

"The supply of forage for these animals, especially while crossing the desert above alluded to, raises a difficulty which I am unable as yet to solve.

"The disposal of sick upon this long line of march, a large number of whom must be reckoned upon during the hot weather, is another source of difficulty.

"Four months, at least, would be required before Khartum was reached.

"Under these circumstances I consider this route quite unsuited for the purpose intended."

"Suakin Route.

"The route, Suakin-Berber.

"The difficulties to be encountered along this route resolve themselves into—

- (a.) Opposition from hostile tribes.
- (b.) Oppressive heat.
- (c.) Want of water.

"As regards the first (a) although the enemy would be a determined one, and the mountainous country to be traversed

* Sir F. Stephenson afterwards modified his opinion on this point. See page 50.

† This difficulty was of course obviated by the use of small boats.
(S.C.1)

would offer him great facilities for defence, the difficulties are not insuperable.

"The second (b) would be considerably diminished if the departure of an expedition from Suakin were delayed until the middle of October, when the heat would begin to decrease.

"The portion of this route to Ariab, about 120 miles, is mountainous and comparatively cool, leaving about 120 miles to be traversed across a hot plain with a very scanty supply of water.

"A force moving by this route would have to establish from nine to ten fortified posts, as it advanced, for supplies of stores, care of sick, and storage of water—moving on by detachments when practicable.

"The whole march to Khartum by this route might be traversed in nine weeks.

"The advantages of this route are that the distance to be gone over by land is much shorter than that by any other line; that a firm base would be established at Suakin, within 4 days from Suez, or $4\frac{1}{2}$ days from Cairo; a considerable advantage over the long and difficult line of communication between Cairo and the Korosko base, whereby far greater facilities and expedition would be attained for concentrating a force with its supplies and transport.

"The supply of fresh meat would be more easily carried out along this route.

"The care of the sick would be better provided for, and they could, in a comparatively short time be placed in comfort in hospital on board ship, and then be forwarded to Suez, or even England, in about half the time it would take to convey them to Cairo from Korosko, and with far less discomfort.

"The supply of medical comforts, including even ice, a most important consideration, would be only practicable along this line, and should not be lost sight of.

"The presence of a fleet of men-of-war and transports at Suakin would, obviously, be of considerable advantage in many respects in view of the withdrawal of our troops, and (possibly) relieved garrisons.

"After due consideration of the conditions attending operations by these different routes, I am persuaded that the one by Suakin and Berber is the most favourable for an expedition to Khartum."

Sir F. Stephenson's opinions generally coincided with those of Lord Wolseley as to the strength and composition of the force, and its date of departure.

Lord Wolseley and Sir F. Stephenson concur

Sir Samuel Baker, who was also consulted, was in favour of a triple line of advance, and proposed that columns should simultaneously move from Suakin to Berber, from Korosko to Abu Hamed, and from Wady Halfa to Dongola.

as to strength
of force.
Sir S. Baker's
opinion.

Lieutenant-Colonel Maurice, R.A., Deputy Assistant Quartermaster-General at Headquarters, also, on the 17th of May, after the news had arrived that Berber was in danger, drew up the following memorandum on the routes by which an army could advance upon Khartum:

"Prior to the fall of Berber,* the route from Suakin upon Berber might have been possible; but now that Berber, and virtually Abu Hamed also, are in the hands of the sympathizers with the Mahdi, an advance by this route seems to me impossible, for the following reasons:—

Col. Maurice's
memorandum
on line of
advance.

"It is impossible to arrange for the advance of a large force by the Suakin-Berber route without sending on a small detachment in advance to prepare the way by improving water supply, improving and surveying the road, &c.

"Now, during the last 100 miles of the road to Berber, a force so sent on in advance must necessarily come into collision or be exposed to the attack of the enemy in and around Berber itself, and of the tribes sure to be hostile in that neighbourhood. The larger force could not support the advanced detachment, because the enforced retreat of that detachment would deprive the larger force of all hope of water, which would be in the hands of the enemy.

"A similar difficulty seems to me now to attend all arrangements for making the march, direct across the Korosko desert, the principal mode of attack.

"The Nile route, if the railway be completed round the Wady Halfa Cataracts, so as to pass below the more serious cataracts, and reach the Nile level below the Semneh Cataract, seems to me by far the safest for the mass of the expedition.

"I think, from what I have been able to learn from the engineers who were employed on the railway, that the railway could be thus completed in about two months, say by the middle of July, if the orders were now given for it.

"In the same time, or less, steamers adapted to Nile transport could be built in this country and arrive at Semneh

* Berber did not actually fall till ten days later. It was not known for certain in England whether it had been captured, but it was known to be in such straits that there was no prospect of its holding out till an expedition could reach it.

in time to complete the number of boats required for the expedition, which, according to Captain Hall's report, are deficient. This would not interfere with the utilization of all the boats which, according to Captain Hall's report, are now available. In the meantime it would be necessary to subsidize all the sheikhs at the cataracts. As the movement of the flotilla cannot begin below the 2nd Cataract prior to about August 20th, the lighter draft boats which could be built in England would certainly be in time to supplement the expedition, and would probably be able to pass most of the cataracts when the water was not at the extreme high Nile required for those now in the Nile.

"Meantime it would undoubtedly be advisable to prepare to open the route across the Korosko desert by friendly natives supported by a column, which, however, should not attempt to strike Abu-Hamed until the main expedition has been able to exercise sufficient pressure to secure that point. When this was done and when water could be depôt-d along the desert from both sides at once, it is probable that bodies of 1,000 men at a time on camels could securely pass that line, immensely relieving the pressure on the main line and making the movement independent of the height of the Nile.

"Again, a demonstration, not in large force, but employing as many friendly natives as possible, would be of the greatest advantage from Suakin upon Berber, because as the route could be securely prepared for the first 140 miles of the route, and could be opened through as soon as Berber had been secured by the main column, it would tend to operate very much more rapidly than any other upon the general disposition of the tribes, and would, after a successful termination, greatly facilitate the withdrawal of the force."

For some months the Government arrived at no definite decision as to which of the several routes advocated should be adopted, but further inquiries were made in all quarters. Lord Wolseley, Colonel Sir A. Clarke, R.E., Lieutenant-Colonel Ardagh, R.E., and Lieutenant-Colonel Chermiside, the Governor of Suakin, were requested to write memoranda on the advantages and disadvantages of a railway from Suakin to Berber, and on the arrangements that would have to be made. On the 14th of June Sir F. Stephenson was informed by the Secretary of State for War that Her Majesty's Government had decided to take some preliminary steps to facilitate the construction of a railway from Suakin should they determine hereafter on such a measure. For this purpose the 17th

No decision
arrived at.

June 14th.
Her Majesty's
Government
decide to take
steps to facilitate
construction of Suakin-
Berber rail-
way.

Company of Engineers was to proceed to Suakin to make arrangements for construction of piers, landing-stages, &c. Four Engineer officers and twelve non-commissioned officers and sappers, specially selected for experience in railway survey and construction, were to be sent, and some railway stores were to be collected at Suakin. Jetties were to be constructed and arrangements were to be made for forming a railway depôt.

The military authorities consulted, were in favour of the railway being of narrow guage, in the event of its construction being decided upon.

The Admiralty had been requested to despatch a well-qualified officer to report on the Nile. Commander T. F. Hammill, R.N., had been selected for this duty and had arrived at Wady Halfa on May 15th, and after staying there for three days had proceeded to Hannek. He made an exhaustive report* on the river between the Second and Third Cataracts, from which Vice-Admiral Lord John Hay, Commander-in-Chief, Mediterranean Station, arrived at the conclusion set forth in the following letter:—

Commander
Hammill,
R.N. His
report on the
Nile.

"Helicon," at Alexandria, 3rd August, 1884.

"Sir,

"Be pleased to acquaint the Lords Commissioners of the Admiralty with reference to your telegram of the 28th ultimo, No. 209, and my reply thereto of the 29th ultimo, No. 273, that I formed the opinion that the 400 boat proposal was not practicable, after consultation with Commander Hammill, who has personally visited the cataracts referred to.

Opinion of
Admiral Lord
John Hay.

"Obviously the proposal is made in the belief that the features and circumstances of the Nile in those parts are very similar to those presented to the Red River Expedition.

* * * * *

"Boats, on the part of the Nile referred to, cannot be poled because the water is too deep even close to the shore. Their Lordships will not require to be reminded that propulsion by the use of poles is an operation necessarily confined to shallow waters.

"Boats cannot be tracked by lines from the banks because of the steep precipitous character of the rocky sides of the river.

"Boats cannot be dragged, or carried, because of the unfavourable nature of the ground.

* See Appendix C.

"The stream runs so swiftly that rowing small boats, or sailing them, could not be relied on as a mode of progression. Moreover, the river is so rough in parts as to be quite unsuitable to passage by small boats.

"You would require a pilot for each boat to ensure the slightest approach to safety. I may remark that the best information at our command leads us to believe that the supply of pilots is very limited.

"The men in small boats would be necessarily much exposed to the sun during periods of long continued exertion; this, however, may perhaps be regarded as a secondary consideration.

"I may again say in conclusion that my opinion on this subject is founded upon Commander Hammill's statements of the features of the Nile and of its banks between Wady Halfa and Hannek; and I beg you will express to their Lordships my regret at having been compelled to report unfavourably on a proposed operation which, if practicable, would have been most interesting to carry out."

"I have, &c.,

"JOHN HAY, Admiral."

July.
Report by Sir
J. McNeill, Sir
R. Buller, and
Col. Butler
on advance by
the Nile.

As will be seen, however, from the following report, a Committee consisting of Major-Generals Sir John McNeill and Sir Redvers Buller, and Colonel W. F. Butler had arrived at a wholly different conclusion.

"We, the undersigned, Officers who took part in the Expedition to the Red River in 1870, having been asked to express our opinion upon the practicability of the scheme proposed by Lord Wolseley for the advance of a force upon Dongola, and if necessary for its further advance thence by the River Nile upon Khartum, have the honour to report as follows :—

"We have carefully studied Lord Wolseley's proposals, also all the reports upon the navigation of the Nile and of its rapids, generally called cataracts, which have recently been made by Captain Molyneux and Commander Hammill of the Royal Navy. We have had the advantage of a conversation on this subject with Admiral Sir Cooper Key, and with Captain Hall of the Admiralty, and we have carefully perused a paper by the latter officer upon the navigation of the Nile, which gives his estimate of the time in which, according to his views, an expedition working in boats could mount the Nile from Wady Halfa, the second cataract, to Dongola.

In 1870, a force consisting of about 1,400 men proceeded from Thunder Bay on Lake Superior to Fort Garry on the Red River, a distance of over 600 miles, through a wilderness practically destitute of supplies, and where no native labour was obtainable.

"Remembering this, we believe that a brigade can easily be conveyed in small boats from Cairo to Dongola in the time stated by Lord Wolseley, and further, that should it be necessary to send a still larger force by water to Khartum, that operation will present no insuperable difficulties.

"From all we can learn about the Nile, and the difficulties of desert journeys where water for all the men and animals employed has to be conveyed on camels, we are convinced that if it is necessary to take a fighting force to Khartum before the end of the year, or the end of January, the Nile will be found the easiest, the safest, and immensely the cheapest line of advance to adopt.

"We do not venture to enter into any discussion of the political question touched upon in Lord Wolseley's paper on this subject. We confine our remarks solely to the question of the physical difficulties to be overcome in an advance upon Dongola or Khartum by the Nile route, small boats being used for the conveyance of the men, and their provisions and stores.

"It appears to us after reading the reports and papers relative to the proposed expedition that the question has been regarded by the naval and military departments from two entirely different points of view.

"On the naval side the consideration of the difficulties attending the upward passage of cataracts, rapids, and water distance by boats, has always been based upon the assumption that steamers of considerable size, and boats of from 10 to 40 tons burden, would be used for the conveyance of the troops, and that high Nile was the essential condition requisite for the success of the undertaking.

"On the other hand, the military proposal has in view the employment of small boats, such as were used during the Red River Expedition, and for these boats not only is high Nile not essential, but a lower condition of the river will be more favourable to the operations, while it is evident that the difficulties of the ascent will decrease in direct proportion to the weight of the boats employed, and we believe that, except at the one or two very bad spots, the crew of ten soldiers and two natives will be able to take their boat

without other assistance through all the rapids between Sarras and Hannek.

"In our opinion the question really resolves into this: Is it possible to procure and place on the Nile at Sarras 500 boats by the 5th October?

"Surely this should be possible.

"We append a few remarks which we have made on some of the points raised by Captain Hall in his paper of the 26th July.

"From that paper and from a statement made by Sir Cooper Key yesterday, it would appear that the Admiralty do not wish to assume any responsibility for the advance of an expedition up the Nile in boats, and would deprecate any joint expedition of the army and navy along the Nile, but we gather that the Admiralty would undertake to convey the boats and stores required as far as the foot of the second cataract.

"If this is done by the date specified above, we believe that the further advance of the brigade to Dongola is a matter of detail well within the power of the military authorities."

"JOHN C. MCNEILL, Major-General.

"REDVERS BULLER, Major-General.

"W. F. BUTLER, Colonel."

"29th July, 1884."

Colonel Butler also wrote the following memorandum:—

"Lord Wolseley,

"There are four distinct methods by which boats of from 26 to 32 feet in length, 6 to 7 feet beam, and 18 to 24 inches draught, when loaded, can be moved against stream; these are sails, oars, poles, and track line. All four means can, in some conditions of water, be used at the same time; but, as a rule, tracking is resorted to when the current is too strong for oars or sails. The track-line and the pole are, in fact, the means by which rapid water can best be stemmed. In a large river the lower stages of water are essential to the best use of these two methods. In high water the pole will not reach bottom, and "tracking" has to be done along the outer, or main, banks of the stream, which are usually rough, broken with fissures, or encumbered by a growth of trees, bushes, or by drift wood, rendering progress slow, laborious, and exhausting; but in low season the sand banks left bare by the receding waters become admirably adapted to the use of the

Supple-
mentary
memorandum
by Colonel
Butler.

track line. The margin close to the water is usually firm under foot, and is clear of obstruction. Where these lower banks end, recourse is had to the oar; or if the current be sharp, to the pole until another sand bank is come to which will permit the track line again being run out; and at all times the sails are available to take advantage of any favourable wind; in fact, it may be said that boats of the dimensions stated, carrying crews of 10 or 12 men, can always make some headway against a stream, except where actual barriers of rock cross the channel or where the water becomes too shallow to float the boats.

"In the case of the rock barriers the stores and boats can be lifted over. Shallowness of water would, of course, be fatal to progress if the shallowness existed for any considerable distance. In the case of the Nile, however, this contingency is not to be feared with boats of light draught, for the following reasons:—

"The Nile differs from all other rivers on the globe in the fact that the higher it is ascended from the sea through 1,500 miles of its course the greater becomes the volume of water found in it. In that immense distance the river receives no tributary streams, while the evaporation caused by the sun, and the loss through percolation into the sand, amounts to nearly 30 per cent. in volume of water.

"The difference in volume between highest Nile in October and lowest Nile in May is as 15 to 1, but although the fall is rapid from that highest point in October, a stage of water is reached in December which does not seriously diminish during the next two months.

"Thus, in mid December, the river has five times its lowest volume; in the middle of January it has more than four times, and in the middle of February it has just three times its lowest May volume.

"Commander Hammill, R.N., visited the Nile between Wady Halfa and Hannek, during the lowest stage of the river, in May and June. This portion of the Nile is undoubtedly the worst for navigation in the entire course below Khartum. The descent is nearly 14 inches to a mile. It has the largest number of cataracts and rapids and the largest stretches of continuous strong water; yet the report of that officer only speaks of the river being sometimes fordable at one spot, Koyeh, and he regards the east shore as absolutely secure from attack from the west side, which could not be the case if the river had been fordable at intervals.

"It has been taken for granted, in many papers and reports on the Nile, that, because trade between Wady Halfa and Dongola is carried on by means of camels and not by boats, the river is necessarily impassable for boats in that distance, but it must be remembered that there are many other reasons why the natives should find it easier to use camels than boats. Almost alone among the rivers of the world the Nile has no timber on its shores suitable to build craft to navigate its waters. Boats on the Upper Nile must be costly articles. In one of the intercepted letters from the French army in 1799, the Comptroller of Finance in Egypt writes to the Directory thus:—"Since our arrival (15 months earlier) a prodigious number of Nile boats have been cut up and burnt for want of other fuel—these neither have, nor can, by any possible means be replaced.' The wood to build them had to be imported, and the sea was closed.

"The Arab, too, is only a boatman when current or wind is in his favour. He does not like the work of the oar, and knows nothing of the American Indian and half-breed system of tracking, poling, and portaging. The country from which he came has no rivers in it, but the camel has been his ship for thousands of years, and it is little wonder that he should prefer it to any other means of movement.

"It has also been said that the Nile would not be found adapted to the use of poles on account of the soft mud at the bottom of the river; now, I have already stated that poles can only be of use in very rapid, and comparatively speaking, shallow water. These rapid and shallow places are precisely those where the bottom *must* be hard, stony, or rocky, because the very rapidity of the stream washes away the softer substances, as a quick flowing tide will scour the mouth of a harbour of mud and sand.

"A great deal has been said upon the difficulty, almost the impossibility, of ascending the Nile cataracts, but the question appears to have been judged altogether upon the assumption that large boats must be used. When once we come to deal with the kind of boats I have specified, all the conditions change. If the north wind blows these boats can take advantage of it as well as can any larger craft; if the water prove rapid they have pole and track line to overcome it; if the current should be deep, and there should be no wind, oars are available. Finally, if rocks should form a continuous ridge across the river, the stores can be portaged and the boat lifted over the obstruction.

"I have not seen the Nile above Cairo and its neighbourhood, and so far, I labour under a disadvantage in writing these rough notes, but I have had considerable and varied experience in ascending rapid and dangerous rivers. Water is water, and rock is rock, whether they lie in America or in Africa, and the conditions which they can assume towards each other are much the same all the world over.

"I take the broad fact that the Nile has an average fall in 1,800 miles of about 9 inches to the mile. The river Saskatchewan in North America from Rocky Mountain House to Lake Winnipeg—a distance of 1,200 miles by river channel—has a fall of more than 2 feet to the mile.

"The Winnipeg river, from the Lake of the Woods to Lake Winnipeg, has a fall of nearly 3 feet to the mile, yet it was this last-named river up which the 60th Rifles worked their way in September 1870, at the rate of 16 miles a-day, having actually to lift their boats out of the water below rocky interruptions and launch them again above these rocks and rapids 27 times between the two lakes. It may be said with truth that the entire trade of that vast region of North America, until recently known as the Hudson's Bay Territory, was carried on under conditions very much more unfavourable than those of the Nile.

"W. F. BUTLER, Colonel.

Plymouth, 4th August, 1884."

While these deliberations were taking place, affairs in the Sudan had become so serious that grave fears were entertained for the safety of Egypt proper. As early as April it had been decided to fortify Wady Halfa and Korosko and to establish the main body of the force at Assuan.

It was at first considered inadvisable to employ British troops for frontier defence, as the principal medical officer was of opinion that exposure to the climate of Assuan during the summer months, would be attended with disastrous consequences; but on the 11th of March the 1st Battalion Royal Sussex Regiment had been despatched to Assiut, and on the 22nd of June Sir F. Stephenson telegraphed to Lord Hartington that, the tribes in front having become troublesome, this battalion would proceed at once to Assuan, to support the Egyptian troops, and give confidence to the natives, and that another battalion would proceed to Keneh. These movements were at once carried out, the Royal Sussex

Progress of
the insurrec-
tion during
the spring.

June.
Royal Sussex
sent to
Assuan.

leaving Assiut on the 26th June, and arriving at Assuan on the 7th July, and the 2nd Battalion Duke of Cornwall's Light Infantry leaving Cairo on the 4th July, and arriving at Keneh on the 9th of that month.

Events at
Suakin.

In the meanwhile, the 17th Company Royal Engineers had arrived at Suakin, and some work had been commenced to prepare for the proposed railway to Berber. At the end of July, Major-General A. J. Lyon-Fremantle arrived and took command. At the end of August, however, orders were sent to stop work on the railway.

Naval patrols
on the Nile.

During this period the Nile had been constantly patrolled by the Egyptian steamers, Gizeh, Mahmudieh, and Nasif-el-Kheir, manned by bluejackets, armed with a Gardner gun apiece (one from H.M.S. "Monarch," and two from H.M.S. "Invincible"), and commanded respectively by Lieutenants W. C. Reid, J. G. Ede, and R. Poore, of the Royal Navy.

Defence of
the Nubian
Desert.

The Nubian Desert was also being guarded by a force of Ababdeh Arabs, under Captain H. H. Kitchener, R.E. (Major, E.A.), and Lieutenant H. M. L. Rundle, R.A. (Major, E.A.). These officers had been originally despatched to Korosko, with a view to their proceeding to Berber, to advise Hussein Pasha Khalifa, but the position in the neighbourhood of Abu Hamed having become serious it was considered inadvisable for them to proceed on their journey. Their services had, however, been utilised to raise a force of Bedwîn, with whom it had been hoped that Berber might be relieved, and who were eventually employed as outposts in the Eastern Desert. Major Kitchener had been appointed Special Commissioner to the Egyptian Government, and was given a Firman authorising him to enter into negotiations with the Bedwîn tribes.

These officers got to within sight of Abu Hamed, and established various desert posts.

Defence of
the Lybian
Desert.

Lieutenant E. J. M. Stuart Wortley, King's Royal Rifles (Major, E.A.), had been given command of 500 Bedwîn of the Jowasi tribe, with instructions to patrol the Western Desert and establish posts in the Great Oasis and at Selima, on the Arbain Road. It being thought possible that the Sudanese might invade Egypt by this route, Lieutenant-Colonel H. E. Colville, Grenadier Guards, was ordered to accompany the expedition and report on the road to the English military authorities.

The expedition left Assiut on the 1st of July, and reached Beris at the southern extremity of the Great Oasis on the 9th.

Here, owing to the difficulties of the road and the want of transport animals, 400 of the Bedwîn had to be left. The remainder of the party arrived at the Oasis of Selima on July the 25th, and at Sakyet el Abd, on the Nile, on the 29th, and thence returned to Wady Halfa.

Colonel Colville reported that, owing to the scarcity of water and forage, he considered the road impracticable for a force of over 1000 men.

In the meanwhile, the wave of rebellion was steadily rolling northward, and by the beginning of July had involved the upper portion of the province of Dongola. The Mudir had, on the one side, been promised a³ year's pay for himself and his troops, if he would hold the province for six months; and, on the other, had been appointed Emir of Dongola by the Mahdi, whose emissary he had received with all honours in his capital.

The revolt reaches province of Dongola.

The authorities at Cairo were at this time very ill informed as to the situation south of Dongola, and it was determined that an officer should be sent to report. Major Kitchener was selected, and arrived at the town on the 1st of August.

Major Kitchener sent to Dongola.

Sir F. Stephenson considered the situation so threatening that he regarded it as essential that some British troops should be moved beyond Wady Halfa: and on the 7th August, a vote of credit was obtained from Parliament for 300,000*l.*, to enable a brigade to be despatched at short notice from Wady Halfa to Dongola.

August 7th.
Vote of credit for 300,000*l.*

Lord Hartington communicated the result of this vote to Sir F. Stephenson in the following despatch:

" War Office, 8th August, 1884.

" Sir,

" Her Majesty's Government have obtained from Parliament a Vote of Credit for 300,000*l.*, in order to enable Her Majesty's Government to undertake operations for the relief of General Gordon, should they become necessary, and to make certain preparations in respect thereof.

August 8th.
Despatch from Lord Hartington to Sir F. Stephenson.

" Her Majesty's Government are not at present convinced that it will be impossible for General Gordon, acting on the instructions which he has received, to secure the withdrawal from Khartum, either by the employment of force or of pacific means, of the Egyptian garrisons and of such of the inhabitants as may desire to leave.

" The time, however, which has elapsed since the receipt

of authentic information of General Gordon's exact position, plans, and intentions, is so long, and the state of the surrounding country, as evidenced by the impossibility of communicating with him, is so disturbed, that Her Majesty's Government are of opinion that the time has arrived when some further measure for obtaining accurate information as to his position, and, if necessary, for rendering him assistance, should be adopted.

"I have therefore to acquaint you with the preparations which Her Majesty's Government propose should be made at home and in Egypt for this purpose. Certain preparations have been made at Suakin for the purpose of placing that port in a position to receive the stores which would be required for the construction of a light railway to Berber, or for the landing of the troops and necessary supplies for an expedition across the desert by that route.

"Although subsequent information may still make it appear desirable to adopt this route in the event of any operations becoming necessary for the relief of General Gordon, the most recent information as to the existing condition of affairs, imperfect as it is, appears to point in a different direction.

"Notwithstanding the serious defeats inflicted upon the tribes collected under the leadership of Osman Digna in the spring of this year, the withdrawal of the greater part of the troops, rendered necessary by the approaching heat of the summer, appears to have led to a renewed concentration of hostile tribes in that quarter, and no advance would probably take place from Suakin without the renewal of severe fighting, which, except in the case of absolute necessity, Her Majesty's Government would desire to avoid.

"And further, if Berber is, as now appears certain, in the hands of the adherents of the Mahdi, it is probable that the operation of sending a force to that place (necessarily, on account of the scarcity of water, in small detachments) would be one of considerable difficulty and risk.

"On the other hand, the intelligence which has been received of the spread of the insurrection in the direction of Berber and Dongola, and the uncertainty which still exists as to the position of affairs at the latter place, has created a feeling of alarm and insecurity on the frontiers of Upper Egypt, which has made it, in your opinion, necessary to direct the advance of a portion of the Egyptian Army to positions at Korosko and Wady Halfa, to support the advanced

positions by the despatch of British troops to Assuan, and, as I understand, to contemplate the strengthening of the advanced posts by detachments of British troops. H.R.H. the Field-Marshal Commanding-in-Chief entertains a strong objection, in which I concur, to the policy of scattering the British forces in detachments which would be insufficient by themselves to resist any attack to which they might possibly be exposed, relying solely on the co-operation of the hitherto untried native army.

"It is, therefore, probable that under any circumstances it may be necessary for some time to come that a considerable British force should occupy positions on the Nile above Assiut.

"The country between the frontier of Egypt and Dongola, and Dongola itself, do not appear to be openly hostile, and would, probably, by a demonstration of strength in that direction, be confirmed in a neutral if not friendly attitude towards the Egyptian Government.

"Under these circumstances it seems probable that if any active measures for the relief of General Gordon and the garrison of Khartum should become necessary, the object in view could be accomplished with the least risk of serious opposition and loss of life, combined with the greatest amount of protection to the Egyptian territory, by an operation conducted in the valley of the Nile, if it should appear to be practicable.

"Although the obstacles caused by the series of cataracts which intercept the navigation of the Nile between Assuan and Dongola and Khartum are such as to render almost impossible the transport, by means of the river, of a considerable force and its necessary supplies in the steamboats and other craft which have hitherto been employed, I am advised by competent authorities that the transport of a force of moderate dimensions in small boats, such as were employed in the Red River Expedition in 1870, beyond the point where the ordinary means of Nile navigation would be available, would not present any insuperable difficulties. Her Majesty's Government have, therefore, come to the conclusion that the best mode in which they can place themselves in a position to undertake the relief of General Gordon, should the necessity arise, would be by the provision of the means by which such an expedition could be despatched to Dongola, and as circumstances at the time may render expedient, to Berber or Khartum.

“The principal measures which Her Majesty’s Government are prepared at present to adopt and to sanction with this object in view, are :

“1. To provide for the passing up the first and second cataracts of as many of the Nile steamers as it may be possible and expedient. Directions have already been forwarded by telegraph to you, and by the Board of Admiralty to the Admiral on the Mediterranean Station, with this object.

“2. To obtain from the Admiralty, and from other sources, a supply of small boats, capable of being employed in the transport of troops and supplies beyond the point at which ordinary means of transport will be available.

“3. The additional battalion which you have already asked for will be despatched to Egypt. Another battalion will be placed under orders to proceed to Egypt, if it should be required ; but I am not satisfied that there exists at present at Cairo or in Lower Egypt any such cause for uneasiness as would make it inexpedient for you to strengthen the British force on the Nile to such an extent as will be immediately necessary, from the garrison now under your command.

“4. Arrangements will be made with the Government of India for the early despatch of two battalions, which are first for relief to proceed home and to await orders in Egypt if their services should be required.

“5. You should assoon as possible arrange for the occupation of Wady Halfa by such a force of British troops, including probably the mounted infantry, as you may deem requisite. You will also consider whether it would be expedient at once to despatch there a division of horse artillery and a squadron of cavalry.

“6. Having regard to the declared policy of Her Majesty’s Government, of the evacuation by the Egyptian Government of the Soudan, it appears questionable whether Egyptian troops should, in the event of an advance being decided on, be employed in any positions or operations south of Wady Halfa ; but it appears desirable that the native Camel Corps, and as large a number of the native army as are not required in positions lower down the Nile, should be sent to that place.

“7. Provision will be made at home of such stores as would be immediately required in the event of an expedition being ordered, and as are not at present in store, and could not be immediately supplied.

“Further information on this point will be forwarded to you from time to time.

"8. You will give orders for the collection at Wady Halfa of supplies, up to a limit at present of those necessary for six months for 3,000 men.

"9. Measures should be taken to place the Assuan and Wady Halfa railroads in good working order, and in the latter to increase the length of sidings, and to provide some additional locomotives. Stores of coal should also be collected at Wady Halfa.

"10. You will take measures for the collection and organisation of a transport corps of 1,200 camels.

"The general scope and intention of these instructions and preparations is to enable Her Majesty's Government to give directions at very short notice for the despatch of a brigade of troops of all arms to proceed to Dongola.

"This movement could, in the opinion of the Government, scarcely fail, in the first instance, to afford the means of obtaining full and accurate information as to the position and intentions of General Gordon. And it is probable that such a demonstration would, in itself, be sufficient to strengthen his position, and to secure the co-operation of the tribes which have not joined the movement of the Mahdi, to such an extent as to enable General Gordon to secure the principal object of his mission.

"If during the progress of these preparations for the operations above described, it should appear that an actual advance on Khartum is imperatively required, it will be necessary to further increase the number of troops at your disposal and the scale of the preparations now sanctioned.

"But, in any event, these measures, and the advance of the force indicated, should it be decided on, cannot fail, in the opinion of Her Majesty's Government, materially to facilitate the adoption of such further measures, if they should unfortunately be found to be ultimately required."

"I have, &c.,

"HARTINGTON."

Sir F. Stephenson replied to this despatch by telegram on August 11th, that he could move to Wady Halfa four battalions, 2,200 bayonets; two squadrons, 200 sabres; one battery horse or field artillery; two batteries mountain guns; and the mounted infantry. That the small boats proposed were not suitable, and that he could procure a large amount of water transport locally.

Force
available for
frontier.

(s.c.1)

E

400 boats
ordered.
General Earle
to command
Expedition.

Lord Hartington, however, stated in a telegram despatched on the 13th of August, that the Admiralty reports led him to doubt whether operations could be conducted with local land or water transport within the ensuing winter,* and without enormous expense, and that as experienced officers were confident of the practicability of the boat plan, he proposed to adhere to it and order 400 at once. He also informed Sir F. Stephenson that Major-General Earle would take command of the expedition, under his orders, with Major-General Sir R. Buller as his Chief of the Staff.

Col. Colville
sent to Don-
gola.

On receipt of this telegram, Sir F. Stephenson at once made arrangements for collecting 5,000 natives at Wady Halfa to haul steamers, &c., up the second cataract, and gave orders for the purchase of 500 camels for the mounted infantry. He also despatched Lieutenant-Colonel Colville, who was then at Sakyet el Abd, to Dongola to report to him† on the supplies of the province and the attitude of the tribes.

Sir F. Ste-
phenson urges
occupation of
Dongola.

On the 16th of August, Sir F. Stephenson telegraphed to the Secretary of State for War that he considered it advisable both on political as well as military grounds that an early occupation of Dongola should take place; and also urged that he should be authorised to pass steamers and other craft up the Second Cataract before the middle of September. In reply he was informed that it was considered necessary to retain at least 20 good steamers north of Wady Halfa, and that until that number was collected it was inadvisable to pass any over the Second Cataract, further that the small boats propelled by their own crews would take the place of the steamers in the upper reaches. He was also asked what force he proposed to send to Dongola and how he would get it there.

Sir F. Stephenson replied that he considered it safe to send 200 mounted infantry to Dongola, and that it was quite possible to send a larger force, but impossible, owing to the distance, for it to proceed to Khartum and back before the next hot season, and that he considered that, owing to the difficulties of the river, the expedition to Dongola in small boats was impracticable. He also again pressed on the Secretary of the State for War his conviction that the Suakin-Berber route was the preferable one for an advance on Khartum.

* Owing to the prevailing wind blowing down stream in that reach, local craft cannot be depended on for transport purposes between Debbah and Abu Hamed.

† Major Kitchener was reporting to the English Foreign Office and the Egyptian War Office.

On the 22nd of August he stated that owing to difficulties in procuring camels, the mounted infantry could not start before the middle of the following month. But on the 25th, having received a report from Colonel Colvile, who had been down the Batan el Hajar cataracts in a nugger, that 60 of these boats were available, he suggested in a telegram to Lord Hartington that the mounted infantry should proceed to Dongola by that means.

On the 26th of August the following telegram was despatched by the Secretary of State for War to Sir. F. Stephenson:—

“ War Office, August 26, 1884, midnight.

“ After anxious consideration, Her Majesty’s Government have come to the conclusion that it is unjust to you to ask you to be responsible for directing an operation which, after full knowledge of plan, you consider to be impracticable. They have therefore decided to send Lord Wolseley to take temporarily the chief command in Egypt. Government highly appreciate the manner in which you have carried out the important and difficult duties of your command, and earnestly hope that you may feel yourself able to remain in Egypt whilst Lord Wolseley is there, and assist him with your advice. Lord Wolseley goes out with Lord Northbrook.”

On the 9th of September General Lord Wolseley, G.C.B., &c., arrived at Cairo and took command.

August 26th.
Command of
Expedition
given to Lord
Wolseley.

CHAPTER III.

ORGANISATION OF THE NILE EXPEDITION.

September
8th, 1884.
Lord
Wolseley's
arrival at
Cairo.
Appointments
made.

ON September 9th, 1884, Lord Wolseley arrived at Cairo, and assumed command, and on the 10th the following appointments were made:—

Major-General Sir Redvers Buller, V.C., K.C.M.G., C.B., to be Chief of the Staff.

Major-General Earle, C.B., C.S.I., to command the troops at Wady Halfa and the south.

Colonel R. Harrison, C.B., R.E., to be Staff Officer at Wady Halfa.

Major-General Sir E. Wood, V.C., K.C.B., &c., to be General of Communications south of Assiut.

Colonel Sir H. Stewart, K.C.B., to command the troops at Dongola.

Captain the Earl of Airlie, 10th Hussars, to be Staff Officer at Dongola.

Lieutenant-Colonel J. F. Maurice, R.A., to command the troops at Assiut.

Lieutenant-General Sir F. Stephenson, K.C.B., to command all troops north of Assiut.

Colonel H. Brackenbury, C.B., R.A., arrived on the 18th September, and was appointed D.A.G. at headquarters, and on the same day Colonel Sir C. Wilson, K.C.M.G., C.B., R.E., was appointed D.A.G., as head of the Intelligence Department.

Previous to Lord Wolseley's arrival the following Staff Officers had also been posted on the line of advance.

Major Kitchener, at Debbeh.

Lieutenant-Colonel Colville, at Dongola.

Colonel F. Duncan, R.A. (E.A.), to command at Wady Halfa.

Brigadier-General F. W. Grenfell, A.D.C., to command at Assuan.

British army
in Egypt.

The British force in Egypt consisted at this time of 1 cavalry regiment, 1 horse and 1 field battery, 1 camel battery, 2 garrison batteries, 2 companies Royal Engineers, 11½ battalions of the line and 1 of marines, distributed as follows:—

Wady Halfa and South

1st Battalion Royal Sussex Regiment.
 1st Battalion South Staffordshire Regiment.
 Wing Mounted Infantry.

Assuan.

2nd Battalion Duke of Cornwall's Light Infantry.
 2nd Battalion Essex Regiment.
 26th Company Royal Engineers.
 Wing Mounted Infantry.

North of Assuan and at Suakin.

19th Hussars.
 G/B Royal Horse Artillery.
 I/2 Royal Artillery.
 5/1 Sc.D. Royal Artillery.
 6/1 Sc.D. Royal Artillery.
 1/1 S.D. Royal Artillery (Camel Battery).
 17th Company Royal Engineers.
 1st Battalion Royal Irish Regiment.
 1st " Yorkshire Regiment.
 1st " Black Watch (Royal Highlanders).
 1st " Berkshire Regiment.
 1st " Royal West Kent Regiment.
 3rd " King's Royal Rifle Corps ($\frac{1}{2}$ battalion).
 1st " Gordon Highlanders.
 1st " Cameron Highlanders.
 A Battalion of Royal Marines.

The 2nd Battalion East Surrey Regiment was under orders to proceed from India to Egypt, and the 1st Battalion Royal Scots from the West Indies. The 8th and 11th Companies Royal Engineers were coming from England.

Although it was not till the 21st of September that the Government decided that, if necessary, the force under command of Lord Wolseley might proceed beyond Dongola, it had long been apparent that such a necessity might arise.* Two days after his arrival at Cairo, after consultation with Lord Northbrook who had been especially sent to Egypt by Her Majesty's Government, with Sir E. Baring, Her Majesty's

* Lord Wolseley's memoranda, given on pages 26 and 30, show that he had foreseen it as early as April.

Agent and Consul-General, and with Sir F. Stephenson, Lord Wolseley sent the following despatch to the Secretary of State for War :—

"Cairo, 11th September, 1884.

"My Lord,

Lord
Wolseley's
despatch
of 11th
September.

"I think it is desirable that I should at once enter fully into the question of what should be the number and composition of the force that would be required for the relief of Khartum this coming winter, in the event of such an operation becoming inevitable.

"2. Possibly no such undertaking may be found necessary, but, looking to the present condition of affairs at Khartum, it would, in my opinion, be dangerous not to provide for such a contingency.

"3. The troops now in Egypt or on their way here, are as follows :—

	Rank and File.
1 Regiment of cavalry (mounted) ..	365
13½ Battalions of infantry* ..	8,887
1 Battery Royal Horse Artillery ..	159
1 British field battery ..	135
1 Camel battery ..	119
2 Garrison batteries ..	225
3 Companies of Engineers (not counting the one at Suakin) ..	569
Mounted infantry ..	423
Total ..	<hr/> 10,882 <hr/>

"This gives a fighting force of 365 sabres, 423 mounted infantry, and 8,887 bayonets, with 18 field guns, besides the two garrison batteries Royal Artillery, for the occupation of fortified places like the citadel of Cairo.

"4. After due consultation with Lord Northbrook, Sir E. Baring, and Lieutenant-General Sir F. Stephenson, I find that, in their opinion, in the event of a force being sent up the Nile beyond Wady Halfa, the following troops would, under present conditions, constitute a sufficient force for Egypt proper, namely :—

For Alexandria—

1½ Battalions of infantry,
1 Garrison battery.

* This did not include the Royal Marines at Suakin.

For Cairo—

- 3 Battalions of infantry,
- 1 Squadron of cavalry,
- 1 Battery horse artillery,
- 1 Field battery,
- 1 Garrison battery,

all being British troops.

"5. Deducting these proposed garrisons from the troops we have in Egypt, there would remain available for operations up the Nile, south of Cairo—

- 3 Squadrons of cavalry,
- 9 Battalions of infantry,
- 1 Camel battery, and
- The Mounted Infantry,

or, in other words, about 300 sabres, and 6,000 bayonets, with six mountain guns, and 423 mounted infantry.

"6. The line of communications between Cairo and Hannek may, in my opinion, be safely left to the care of the native army, strengthened by one British battalion.

"7. From Hannek to Berber (inclusive) at least five British battalions will be required to garrison the important points along the route where magazines of stores and provisions will be formed.

"8. Deducting these six British battalions (1 + 5), required for the communications, from the nine referred to in paragraph 5, three battalions only would remain available for any expeditionary force it might be necessary to send to Khartum.

"9. In my minute of 8th April last, I gave a rough summary of what should be, under present conditions, the composition of the force to be placed in line at or beyond Shendi. I think those numbers should be adhered to.

"10. To place ourselves, therefore, in a position to be able to meet the possible contingency of having to send a force by the Nile route to Khartum, it is in my opinion absolutely necessary to send here with the least possible delay two battalions of infantry from Malta, and the following detachments from England, to be here converted into a camel corps. This camel corps should be raised upon the same principle that was lately adopted when raising a corps of 200 mounted infantry from the line battalions at home, namely, by obtaining so many men and one or two officers as volunteers from each of the following regiments or battalions:—

Rank and File.

From the seven battalions of Foot Guards,	
40 men from each	280
From the 16 regiments of cavalry of the	
line at home, 40 men from each ..	640
From the three regiments of Household	
Cavalry	100
From the two battalions of the Rifle	
Brigade at home	80

"11. This would enable a fighting force to be placed in line somewhere about the neighbourhood of Shendi, composed (in round numbers) as follows:—

Rank and File.

Five battalions of infantry	3,500
19th Hussars	300
Mounted infantry now existing ..	400
Camel corps which Admiral Lord J.	
Hay will place at my disposal from	
Royal Marines	100
Camel corps coming from England ..	1,100

5,400

Say 5,000 fighting men with six guns.

"12. I have given this subject the deepest thought during my journey from England, and have had the advantage of obtaining the views of the authorities here as to the military position in the Sudan, and, as at present informed, I am decidedly of opinion that with no smaller force would it be safe to advance upon Khartum.

Map 1.

"I should entertain a great hope that upon the arrival at Old Dongola or Debbeh of a fairly imposing British force, any further serious operations would become unnecessary. Our appearance there would be likely to have the effect of entirely breaking up the combination of the tribes now surrounding Khartum, and of so far weakening the force now besieging General Gordon that, with the assistance of the Kababish or other friendly tribes, it would be possible to send a small flying column on camels into that place to his relief.

"Many things point to the probability of such a solution to the problem now before me. Many favourable elements that I cannot here enter upon in detail may fairly be counted

upon to help towards such an end. But on the other hand it would, I think, be extremely wrong to count upon them as certainties.

"13. In studying this military problem, it is necessary to look at it in its worst and most unfavourable aspect, and to make due preparations for meeting and overcoming the difficulties which, in all human probability, it is at all likely would have to be encountered.

"Whilst we hope, and have every reason to hope, that events will turn out as we anticipate, we must take care not only to avoid disaster, but the failure to accomplish the one great and sole object of such an expedition, if sent at all, namely, the relief of General Gordon and of Colonel Stewart, who, as well as I can ascertain, are now closely besieged in Khartum.

"14. I am well aware that Old Dongola and Debbeh could easily be reached with a smaller force than that I have detailed above; but unless any such force had within itself the strength and means to enable it to go, if necessary, to Khartum, its despatch to either of those two places would not be justified. Such an imperfect scheme might entail upon us the shame and failure of having to return to Lower Egypt without having accomplished the only object that any military expedition up the Nile could have under present circumstances.

"15. The facts that the distances to be traversed are so great, the amount of food to be obtained in the desert country to be passed through is so small, and the season of the year is so short when alone military operations are possible, are all circumstances which warn us against accepting even those ordinary risks which enter into all military undertakings; risks which may, at times, be accepted without hesitation when the theatre of operations is a country rich in supplies, and well provided with roads, railways, and other means of transport.

"16. I have to urge upon your Lordship the serious necessity for the immediate consideration of this subject, and I venture to hope that no time may be lost in giving effect to the measures, which, with a full knowledge of our present military position both at home and abroad, I have proposed, with a view to enable us to meet the possible contingency dwelt upon in this despatch.

"17. This despatch should be in your hands on the 22nd instant. Making a liberal allowance of time, the officers

could be selected, the men equipped, and the ships hired for the conveyance of the men who are to form these camel corps, easily within a fortnight from that date, and allowing another fortnight for their voyage they might be landed at Alexandria on the 20th or 21st October. They would thus be in time for any advance upon Khartum that might be determined upon. The two battalions from Malta should, of course, land here at an earlier date.

"18. I should be wanting in my duty if I did not point out in the clearest terms that, unless the force in Egypt be augmented forthwith to the extent I have proposed, we shall not be able to relieve General Gordon this year if the force now surrounding him remains where it is; and it is a certainty, in my opinion, that want of ammunition would prevent him from holding out for another 12 months. I cannot, therefore, too strongly urge upon your Lordship the necessity for immediate action if his relief is to be provided for this coming winter."

"I have, &c.,

"WOLSELEY, General,

"Commander-in-Chief of the Forces in Egypt."

Reinforce-
ments ordered
to Egypt.

The substance of this despatch, as far as it related to the reinforcements required, was on the same day telegraphed to the Secretary of State for War.

Arrangements were at once made in England to organise a camel corps on the lines proposed by Lord Wolseley. The corps was formed into three divisions, the Heavy division, the Light division, and the Guards division. These embarked on the 26th of September, and arrived at Alexandria on the 7th of October.

Problem
before Lord
Wolseley.

The two battalions from Malta were countermanded by Lord Wolseley, on the 20th of September.

As set forth in his despatch of the 11th of September and also in his minute of the 8th of April, the problem before Lord Wolseley was to place a force of about 5,000 fighting men at or near Shendi at the latest by the end of the year, and to carry with them not only supplies for themselves but also for the inhabitants and garrison of Khartum, whom it was his mission to bring away.

Nile, the only
route.

Lord Wolseley, after careful consideration, having arrived at the conclusion that, Berber being in the hands of the enemy, the Suakin-Berber route was impracticable, it became necessary to conduct this advance along the Nile Valley. The first step in the advance was obviously a concentration o

troops at the southernmost limit of the Khedive's dominion, not in revolt, that is, in the province of Dongala.

This preliminary operation would be unattended with any difficulties save those presented by nature and the great length of the line of communication. Its success would not in any measure be dependent on the fighting qualities of the troops or their leaders, but rather on the organisation by which they would be enabled to traverse the distance between Cairo and Dongola in the shortest space of time, and arrive at their destination fully prepared for an immediate further advance.

Careful
organisation
required.

It had been decided that, while the navy would be responsible for landing the troops and stores necessary for the operations, at the most convenient port in Egypt, the army should be responsible for all inland navigation and transport.

Before entering into the details of the organisation, it may be well to glance briefly at the conditions of the march, and the means of communication existing upon its line.

Conditions
of the
movement
southwards.

Taking Cairo as the base, the first stage in the march was from Cairo to Assiut, a distance of 229 miles by rail. As the carrying power on this line was greatly in excess of that on the river, stores would accumulate at Assiut in considerable quantities, and that station would become a secondary base.

The second stage was from Assiut to Assuan, a distance of 318 miles, easily traversed by water transport, the navigation of the river at that time of the year being unimpeded.

At Assuan the first cataract made a disembarkation of stores and men necessary, a railway round the cataract being available to convey them a distance of nine miles to Philæ at its head. At Philæ, the troops, &c. could again be embarked and conveyed by water to Wady Halfa, at the foot of the second or great cataract, a distance of 210 miles of good water.

At Wady Halfa it was again necessary to disembark, and forward men and stores 33 miles by rail to Sarras at the head of the cataract, whence they would be conveyed alternatively by boats and camels to the head of the Dal Cataract, 62 miles distant.

From Dal to Kajbar, a distance of 102 miles, the river at or near high Nile was unobstructed, and no further transshipment was therefore necessary until the latter cataract was reached. Here, however, it would be necessary to make a double portage at Kajbar and at Hannek, 31 miles distant, or a single long one across the bend of the river to Abu Fatmeh, a 24 miles march.

From Hannek to Dongola, a distance of 39 miles, there were no impediments to navigation, and open water continued as far as Belal, 176 miles higher up, beyond Merowi.

Divisions of
line of com-
munications.

The line of communication from Cairo to Dongola, 1,033 miles in length, was therefore necessarily divided into nine stages, 271 miles of which were traversed by rail, 528 miles by steamers, 93 miles by alternate camel and boat transport, and 141 miles by sailing vessels.

Necessity for
special boats.

For the initial 799 miles of this distance, that is, to the head of the railway at Sarras, the preparations to be made were such as entailed great expenditure of energy and power of organization, but were at the same time of an ordinary character. The railways had to be improved, sidings enlarged and extended, fresh locomotives procured and old ones repaired, steamers and sailing boats had to be collected, and their movements controlled; but it was obvious that after passing the 2nd Cataract some extraordinary means of transport would be required, and after anxious consultation with Lord Wolseley and various experts in such matters, the Government had decided to order special boats for this purpose to be constructed.

When Lord Wolseley recommended the construction of these boats for the ascent of the Nile, it was his intention, if circumstances permitted, to convey in them the whole of the infantry, with their arms, ammunition, and 100 days rations per man (these rations remaining intact till the fighting base was reached), and to march the mounted troops along the banks. He had, however, always in view the possibility of either delays occurring by the river route which might compel him to take a short cut across the desert, or of General Gordon's position becoming so critical as to force upon him the necessity of undertaking a desert march into the enemy's country.

It was to meet these contingencies that Lord Wolseley organised the Camel Corps; a step which, as after events proved, was absolutely necessary, but which nevertheless added considerably to the already great difficulties of supply. For it added to the force 1,200 men who could not do a stroke of work towards carrying their own food to the fighting base.

The main
difficulty of
the expe-
dition.

And here, before describing the organization of this remarkable expedition, and before detailing the arrangements by which the compact fighting force, assembling on the Nile for the succour of General Gordon and Khartum, was con-

veyed into the heart of the Sudan, and maintained in that remote region, it will be well to explain what was the great difficulty in the way of a successful campaign.

The Nile Expedition was a campaign less against man than against nature and against time. Had British soldiers and Egyptian camels been able to subsist on sand and occasional water, or had the desert produced beef and biscuit, the army might, in spite of its late start, have reached Khartum in November. But as things were, the rate of progress of the army was dependent on the rate of progress of its supplies. As the difficulty of feeding each man increased with his distance from Alexandria, it was Lord Wolseley's endeavour to keep his army as near the base as possible until such a time as the state of his supplies would enable him to launch it from the fighting base. Had the line of advance been broad enough for a general advance in line, Lord Wolseley would probably have kept his whole army at Cairo until such a time as would have allowed it exactly to overtake its supplies at Korti. But as the front of the army had to be reduced to the width of the Nile, such a simultaneous advance was obviously impossible, and the troops had therefore to be halted at such positions on the river as would allow them to arrive at the fighting base as soon as the supplies were ready for them, and at the same time to be the fewest possible number of miles from the source of supply.

Whalers.

Although the official sanction for the construction of these boats was not given till the 12th August, the military authorities had previously decided on the necessity for their construction, and, on the 7th August, a Committee composed of Colonel W. F. Butler, C.B., h.p., and Lieutenant-Colonel J. Alleyne, R.A., was appointed to report on the most suitable kind of craft, and make the necessary arrangements for their purchase, should the Government authorise it.

These officers proceeded to Portsmouth on the 8th August, and there inspected the various boats used by the Royal Navy and some of the principal steamship companies. Hardly any of these boats were, however, found to be suitable for the navigation of the Nile, being mostly either too heavy or of insufficient carrying power; and the Committee were of opinion that not more than 200 or 250 boats, of at all a suitable class, could be obtained ready made, and that even

Whalers.

Committee on
boats.

Boats
available.

this limited number would not fulfil the requirements of the proposed expedition as thoroughly as boats specially constructed for the purpose.

Selection of
boats.

The next step of the committee was to collect approximately the load which one of the proposed Nile boats would have to carry, and having selected one of the Royal Navy boats which seemed most suitable for the purpose, *i.e.*, a man-of-war's "whaler," to place in it the load and a crew of ten men. The result of this experiment convinced the Committee that a boat slightly exceeding the model in bulk, but less heavily built, would be easily capable of carrying the proposed load. The specification given in Appendix 1 was accordingly made out.

Conditions to
be fulfilled by
whalers.

The main conditions to be fulfilled being:—

(1.) That each boat should carry 12 men, their equipment, ammunition, and 100 days' rations per man.

(2.) That she should be suitable for rowing, sailing before a wind, and tracking, for ascending and descending rapids, and for passing over shallows and the rocky beds of rivers.

(3.) That she should be as light as possible consistent with strength, so that she might be man-handled should it be necessary to take her short distances over land to avoid cataracts.

Tenders called
for.

A number of shipbuilding firms were then communicated with and invited to make tenders for the construction of the boats, one of the chief conditions of the contract being that the boats should be completed within one month of the receipt of the order for their construction. Forty-seven firms responded to this offer, but pending the decision of the Government, no order could be given them to proceed with the work. The Committee, however, ordered one experimental boat to be built at once, and on her completion she was tried in Portsmouth Harbour with the proposed load, and found to answer admirably; her dimensions were 30 ft. x 6 ft. 6 in. x 2 ft. 3 in., and with fixtures she weighed 1,073 lbs. The weight of the model Royal Navy boat of which she was a modification was 1,960 lbs., her dimensions being 28 ft. x 7 ft. 6 in. x 2 ft. 6 in.

August 12th.
Sanction for
construction
of 400 boats.

On August 12th, 1884, Colonel Butler received official sanction to proceed with the construction of the boats, and at once despatched telegrams to the forty-seven firms whose tenders were accepted, and, within a few hours of the Government coming to a decision, the work of construction was commenced; 400 were ordered in the first instance.

On the 22nd August, the proposed Nile Expedition having assumed larger proportions, 400 more boats were ordered.

By the middle of September, the whole of the first 400 boats had been completed and shipped for Egypt, and by the 3rd October, the last of the 800 had left England.

The boats were despatched from England in nineteen ships, each batch being accompanied by an officer in charge, who had orders to remain on board until the last of his boats had been disembarked and taken over by the agent of Messrs. T. Cook and Sons, who had contracted to convey them to Wady Halfa.

The first of these ships, the "Pelican," arrived with 30 boats at Alexandria on September 22nd, 1884; the last, the "Laconia," with 26 boats, on October 18th. The details of these ships, with their freight and the officers accompanying them, is given in Appendix 2.

On arrival at Alexandria, the boats were lowered over the ship's side, and thence towed to the Peninsular and Oriental Steam Navigation Company's mole, outside which they remained afloat till Messrs. Cook could place them in the railway trucks, in which they were conveyed to Assiut.

Before entraining the boats, Messrs. Cook's workmen repaired any damage that they incurred during the sea voyage, this work being superintended by Mr. Bennett, the chief carpenter of H.M.S. "Monarch," whose duty it was to report on the repairs needed and to certify daily that they had been properly executed.

The whole of the arrangements for disembarkation and entraining were under the superintendence of Major-General W. Lennox, V.C., C.B.

As the boats were by so many different makers, it was obviously improbable that their gear would all be interchangeable; every care was, therefore, taken in England to ensure each boat being packed with its proper equipment, and the officers in charge were instructed to see that they were landed together. Unfortunately, however, the boats arrived in Egypt before Mr. Cook, with whom the contract was made in England. Messrs. Cook's agent contended that Messrs. Cook were only bound by their contract to deliver the boats at Wady Halfa. Pending the settlement of the question, boats and gear were separated at Alexandria, and, as will be seen in Colonel Grove's report,* were only again brought together after a great expenditure of time and labour, which, but for this misunderstanding, might have been saved.

August 22nd.
400 more
boats ordered.

Despatch of
boats from
England.

Arrival of
boats at
Alexandria.

Repair of
boats.

Arrangements
at Alexandria.

Separation of
gear.

* Apperdx 3.

Railway
accommoda-
tion for
boats.

There were available on the Egyptian Railway 100 trucks 32 ft. long, 8½ ft. broad, and with sides 1½ ft. high. As the greatest length of any boat was 32 ft., with a keel measurement of 29 ft. 2 in., two of them, one placed over the other, fitted easily into a truck, which was prepared for their reception by having sacks of coal placed along its sides and in its corners. Three sacks of chopped straw were placed on the floor of the truck, and four more along each side, inside the coal, to form a bed for the boat, matting was then placed over the coal and straw, and the lower boat lowered by a crane into the bed thus formed. The second boat was then lowered keel downwards into the lower one, which had previously had its thwarts strengthened by props, and made secure by chocks of wood. Several buckets of water were then thrown into each boat, matting was laid over them as a protection from the sun, and the whole was made fast with lashings.

Last of boats
despatched
to Assiut.

From the 27th September, the date of the departure of the first boat train, an average of 40 boats were despatched daily to Assiut. The last batch was sent off on October 20th, making a total of 789 whalers, 10 gigs, and one Copeman's raft, despatched from Alexandria in 23 days. Each boat train was accompanied by an officer, whose duty it was to see that the matting, lashings, and chocks remained in good order; and that in case of the train being delayed the boats were kept watered. He was accompanied by a carpenter and two or three assistants to repair lashings, &c., if necessary.

On the departure of each train a telegram was sent to the Commandant at Assiut, informing him of the fact, and a waybill giving the number of every truck in each train, and its lading, was sent to him by post. This waybill was returned receipted, with the hour of the arrival of the train at Assiut noted on it.

Transport
from Assiut
to Assuan.

At Assiut the boats were placed in barges fitted up to carry them, in tiers, and in them towed to Assuan, the boat officers proceeding to that station by Post boat, there to await their charges.

The boat gear not being consigned to Messrs. Cook, nor waybilled through, they naturally took no trouble about it, and during this portion of the journey it not only got further separated from the boats, but was in some cases lost or stolen. The large deficiency in sails, which was afterwards discovered at Wady Halfa, was, without doubt, greatly due to this flaw in the contract.

At Assuan, the barges containing boats were moored off Elephantine Island, where the boats were lowered into the water, and thence towed up, 20 at a time, by a steam launch, to the foot of the cataract, where they were manned by a native crew of five men and a Reis to each boat, and towed, tracked, or poled to Philæ, at the head of the cataract. The passage took about five hours.

Their passage
of the 1st
Cataract.

In the meanwhile, the barges containing the boat gear had been towed to the railway station, and the gear put on trucks and conveyed by rail to Philæ. Here an attempt was made to equip all the boats with a certain proportion of their gear; it had, however, become so hopelessly mixed, that it was impossible to do it thoroughly, and it had all to be carefully re-sorted, and in many cases altered to fit at Gemai.

On leaving their barges opposite Elephantine Island, the whalers ceased definitely to be parcels and took up their proper avocation as boats. Rowed, as we have seen, by natives through the first cataract, they were at Philæ made fast, in batches of a dozen or more, to the sterns of the various steamers and barges proceeding southwards, and by them towed to Wady Halfa.

Journey to
Halfa.

The duty of getting whalers through the Second Cataract was confided to Captain Lord Charles Beresford, R.N., Naval A.D.C. to Lord Wolseley. They were taken by Esneh natives to the foot of the Great Gate, and then, with the help of Koko, the native pilot, were passed through that gate and the smaller one above it known as the Bab el Dilli. As many as possible were portaged round by Egyptian soldiers under Major C. H. Smith (Lieut.-Col. E.A.).

Passage of
whalers
through 2nd
Cataract.

The length of the portage at the Second Cataract was about $1\frac{1}{4}$ miles. Colonel Smith had 400 men under his orders, and, as a rule, 30 men carried each boat. The transit took about two hours from the time of lifting the boat out of the water to the time of launching. On one day as many as 20 were portaged, and the services of the Egyptian Army at this point, and also further up the river where portaging was necessary, proved of great value to the Expeditionary Force. Some of the whalers were sent from Wady Halfa to Gemai by railway, and the work of carrying them from the landing place at Wady Halfa to the trucks was also performed by men of the Egyptian Army.

Services of
Egyptian
Army at 2nd
Cataract.

At Gemai, the head of the cataract, a military camp and repairing station was established. Here the whalers were taken into military charge, collected, equipped, and provided with

Equipment of
whalers at
Gemai.

(s.c.1)

crews. Repairing boats and parties were also organised by Lieutenant-Colonel C. Grove, Assistant Adjutant-General, consisting of 47 artificers with forges and all necessary material in 11 boats, which were divided into three parties.

The work done at this dockyard is best described in the report by Colonel Grove, written on the closing of the establishment, which is given in Appendix 3.

Canadian
"Voyageurs"

A prominent feature in the design of this expedition was the utilisation of the varied resources of the Empire, and by the employment of Voyageurs from Canada, Kroomen from the West Coast, and Arabs from Aden. On deciding to employ English-built boats for the ascent of the Nile, the British Government, at Lord Wolseley's recommendation, requested the Government of Canada to engage a number of boatmen or "Voyageurs," skilled in the navigation of rapid water. Three hundred and eighty of these men were engaged by Lord Melgund, Military Secretary to his Excellency the Governor of the Dominion, and came over under command of Lieutenant-Colonel H. Denison and six Canadian officers.*

They left Quebec on the 15th September, and arrived at Wady Halfa on the 26th October.

They were at first employed in passing whalers through the Second Cataract, and afterwards as pilots; permanent parties being stationed for this purpose on the different reaches. Their original engagement was for six months. Like the whalers which they piloted, they may be considered one of the most striking successes of the expedition. "Without them the ascent of the river, if not impossible, would have been far slower, and attended with far greater loss of life. Without them the descent of the river would have been impossible."†

Kroomen.

Besides the Canadians, men of various nationalities were employed in the expedition. The Canadians themselves were divided into Europeans and Caughnawaga Indians, whose skill in working boats in bad water was very remarkable.

266 Kroomen from the West Coast of Africa were engaged and commanded by Major C. C. Smyth, Welsh Regiment, assisted by Major C. H. Tyndale, 2nd West India Regiment. They were employed to man whalers for convoy work and proved to be a great success, but did not stand

* Colonel Grove's report on the voyageurs is given in Appendix 4.

† "The River Column," by Major-General H. Brackenbury, C.B.

the climate well, suffering in summer from fever, and in winter from lung disease.

784 Non-commissioned officers and men and 25 officers of the Egyptian army were also employed on the lines of communication on various duties. As crews to whalers they worked thoroughly well, and crews of Egyptian cavalry made the quickest passages on record.

Egyptian
army
employed as
crews.

Besides the 500 natives of Aden engaged as camel drivers, 1,243 Egyptian and Nubian natives were employed, as follows:—

Natives
employed in
the boats.

On nuggers (between Semneh and Korti), 315 men.

On broad arrow boats (between Semneh and Fatmeh), 81 men.

In whalers, 847 men.

Although the native reises handled their own nuggers admirably, they were found to be of little use in whalers, and were apt to lose their heads in an emergency.

That English-built boats were a necessity if water transport was resorted to, was afterwards proved by the fact that the whole resources of Egypt could only produce 104 vessels fit for the Upper Nile. That a boat which consumes nothing is a more economical means of transport than a camel, more than half of whose carrying power is wasted in the transport of his own forage,* is a proposition too self-evident for argument.

Paucity of
native craft.

Work of the Chief of the Staff's Department.

It was to the maintenance at Dongola and beyond of the non-carrying combatants and non-combatants, that attention was chiefly directed during the first four months of the campaign; of course concurrently with the primary tasks of:—

*Work of the
Chief of the
Staff's
Department.*

- (a) Delivering at Dongola or above it 800 whalers (except such as had to be kept back for convoy

* An Egyptian camel, on a long journey, including the necessary periodical halts, will not carry more than 320 lbs. 13 miles daily. He requires for his own food 10 lbs. of grain besides chopped straw, and a driver, eating a 2 lb. ration daily, is required for every 3 camels. Three camels, therefore, with their driver, eat their loads in 30 days, or 390 miles. As Dongola is 230 miles distant from Halfa, and hardly any supplies can be obtained on the way, it follows that a convoy of camels proceeding from the latter place, could deliver but few stores at the former.

duty), each with a crew of 10 men and 100 days rations per man untouched, and 200 rounds of small arm ammunition per man.

(b) Delivering at the same place—

Cavalry.

Mounted infantry

Camel corps

} On camels, with regimental camel transport and 100 rounds small arm ammunition per man.

Transport companies on camels with as much food and ammunition as they could carry.

Land troops to be ultimately fed by boat troops.

In carrying out these tasks it had always to be borne in mind that the (b) troops (*i.e.*, those marching by land) would ultimately have to be fed out of what (a), the boat troops, took up.

Troops *en route* to be fed locally.

Hence both the troops in whalers and those on shore had to be fed during their upward march from other sources, so that the 100 days' rations per man taken up in the boats might be delivered intact at the fighting base.

Concentration of supplies at fighting base.

Also, as it was certain that both troops and animals would have to remain concentrated at the fighting base for some time after their arrival there, it was necessary to collect at that point supplies of grain, and cattle for their subsistence, in order that, as far as possible, the 100 days' rations for the force might remain intact up to the moment of starting for the front.

As, however, the food supply of the Korti (fighting base), district was insufficient for the wants of the force, grain and cattle (especially the former) had to be brought up from the north.

Sustenance of mounted troops.

Hence, like the boats, the camels proceeding southwards were laden with supplies which it was undesirable that they should touch *en route*, and they and their drivers had, as far as possible, to be fed locally. In addition to the camels were the horses of the cavalry, who had not only to be fed at the fighting base and beyond, whither they carried nothing, but also locally *en route*.

Two phases of supply question.

It will thus be seen that the supply question divided itself into two distinct phases:—

- (a) The supply of the troops locally up to the moment of leaving the fighting base.
- (b) Their supply from that moment.

The first phase necessitated the establishment of various food depôts along the line of communication; the improvement of the existing lines of railway; the purchase of all available native sailing craft (to avoid as far as possible the necessity of employing camels); and the purchase of a certain quantity of camels, as auxiliaries to these vessels, for portaging stores round the cataracts, and to act as transport to the mounted troops later on.

Necessities for local supply.

The second phase was provided for by the whaler rations, which were conveyed by steamer and railway to Gemai, at the head of the Great Cataract, were there placed in the whalers, and were transported thence by British crews up the river to Korti.

Whaler rations.

General of Communications.

In an expedition whose fighting base was to be 1,400 miles from the sea, the intermediate country being almost wholly destitute of supplies, the first place in point of importance may fairly be given to the department of the General of Communications.

General of Communications' Department.

Before any British troops moved south of Halfa, Sir E. Wood had already stored 42,000 rations at Dongola.

As has been shown above, the rations transported by whalers were intended exclusively for the sustenance of the troops after their arrival at the fighting base. Arrangements, therefore, had to be made for the local supply of the troops *en route*. To this end the General of Communications had:—

Arrangements for local supply.

- (a) To form food depôts along the line of march, each under a commandant, with a suitable garrison.
- (b) To arrange, as far as possible, for the victualling of these depôts from local sources.
- (c) To make up the deficiency (which was very great) by supplies sent from the north.
- (d) To purchase and organise sufficient transport for these supplies.
- (e) To so control the movements of troops that none arrived at a depôt which was incapable of providing them with rations to take them on to the next.

Food depôts.

(a) The food depôts may be compared to a number of reservoirs, placed successively at decreasing levels and connected by overflow pipes. As the stream of supplies was flowing southwards, the northern end of the chain was necessarily commenced first, and as the first depôt (or reservoir) filled and overflowed, its surplus was conveyed to the next by camels or sailing craft which formed the connecting link, and so on until the last was filled. These depôts eventually reached the number of 36. With the exception of the most important ones, such as Assiut, Assuan, &c., they were entirely garrisoned by Egyptian troops, and commanded by Anglo-Egyptian officers, whose duties were:—

Duties of
Com-
mandants.

To facilitate the progress of men and stores through their respective stations and districts.

To report to the officer commanding troops any offences committed by the troops on the line of march, and if the party was not commanded by an officer, to deal with them himself.

To furnish with routes all bodies of troops, or individuals entitled to draw rations.

To provide guides when advisable and give all necessary information as to the route, &c.

The table given in Appendix 5 shows the stations, commandants, hospital arrangements, commissariat supplies, wood depôts, postal and telegraph stations established on the line of communications.

Local
supplies.

(b) North of Assuan, supplies were plentiful, but even there, of course, many articles which are necessary for a European soldier's ration were deficient.

Between Assuan and Wady Halfa, only a very limited quantity of supplies or forage could be obtained.

At Wady Halfa itself there was a very moderate supply of sheep, eggs, milk, and vegetables, and as the demand for them increased these articles soon reached exorbitant prices.

As the native title for the district ("the Womb of Rocks") would lead one to suppose, the country between Wady Halfa and Dal was practically destitute of supplies.

Comparison
of different
districts along
the line.

A slight improvement was observed in the Sai Island district, but it was not until Abu Fatmeh was reached that local supplies became at all plentiful. As an example of the sterility of the Batan el Hajar, it may be interesting to note that out of 154,319 lb. of wheat, 2,334,483 lb. of forage, 403 oxen, 466 sheep, and 25,716 lb. of vegetables, purchased in eight months between Wady Halfa and Dongola, only

7,059 lb. of wheat, 533,045 lb. of forage, 1 ox, 42 sheep, and 1,837 lb. of vegetables were procured between Sarras and Kajbar. At Abu Fatmeh some grain was obtained locally by the Commandant, Colonel Maurice, and was there ground by local labour. It was sent on as flour to Dongola.

"To supply Wady Halfa almost everything had to be carried, even to cattle, breadstuffs, forage, and fuel, as the local purchases possible were insignificant compared to the gross quantities needed. On the cataracts everything, absolutely, had to be carried, and to such a degree by camels that forage became the bulkiest supply to be transported. The southern half of the cataracts could be, to a small extent, supplied from Dongola by returning boats, but the bulk of everything had to come from Wady Halfa.*

(c.) The supplies which the General of Communications was unable to procure locally were all ordered in England. Supplies from England.

(d.) In order to fill up the dépôts with supplies, every possible effort was made to procure transport as rapidly as possible and of any kind that came to hand.

These means of transport may be generally divided into three classes. Transport of three classes.

- i. Water;—native sailing craft, steamers, and whalers.†
- ii. Railway.
- iii. Animal—camels, horses, mules, donkeys, and men.

Water Transport.

It was to the first of these, in the order given, that Sir E. Wood first directed his energies, partly because the line of advance lay beside the banks of a great river, partly because by means of water transport the maximum of carrying power with the minimum consumption of supplies was gained, but chiefly because, owing to the condition of the river it was known that water transport by means of native craft would only be practicable for a limited period.

Sir E. Wood's first step therefore, on entering upon his duties as General of Communications, was to purchase every native craft, north of Merowi, that was at all fitted for use

Water Transport.

Native sailing craft.

Paucity of native craft.

* Report by Lieutenant-Colonel E. Hughes, D.C.G., C.M.G., Chief Commissariat Officer.

† Although the boats employed were identical, this local whaler transport must not be confused with whalers conveying troops and whaler rations to the front.

south of Wady Halfa. Of these, 50 were nuggers (boats of the Sudan), obtained through the instrumentality of the Mudir of Dongola. 68 were boats of the Nubian Nile, purchased north of Wady Halfa; of these, however, there was only time to drag 54 through the Second Cataract before it became impassable. Thus the whole resources of Egypt only permitted of 104 boats from the Upper Nile being utilised. Although they did work of great importance until the arrival of the whalers, the "broad arrow boats," as the craft of the Nubian Nile were christened, were not a complete success. The men who understood them could not be persuaded to go south of Wady Halfa, and the inhabitants of the Batan el Hajar were unaccustomed to the management of their lateen sails. Nor were they naturally so well adapted to the rough waters of the cataracts as the nuggers; they had, therefore, mostly to be confined to particular reaches, and many of them were wrecked in getting to these reaches.

The total carrying power of native craft was as follows:—

Nuggers, 400 tons.

Broad arrow boats, 162 tons.

The General of Communications' scheme for the distribution of these boats is given in Appendix 6.

Steamers.

There were also on the Nile, north of Wady Halfa, 36 steamers (particulars of which are given in Appendix 7), belonging to the Egyptian Government, which were at once taken over and employed for transport purposes on the lower reaches of the river. Two of these, the "Nasif-el-Kheir" and "Gizeh," were, on the responsibility of Sir E. Wood, passed through the Second Cataract.*

Yarrow boats.

Two Yarrow stern-wheel steamers were also ordered from England. The first of them, the "Lotus," was taken up the river in pieces and built above the Semneh Cataract. The second, the "Water Lily," was put together at Alexandria and proceeded to Halfa under steam.

Native craft pushed ahead first.

As the first of the whalers did not arrive at Wady Halfa until the 14th October, 1884, about six weeks transport work had to be done without their assistance, but as, up to this date, the chain of dépôts had not filled beyond Wady Halfa,

* The steamers and barges on the lower reaches were entirely in the hands of Messrs. Cook, who had a contract to forward men, stores, and boats to Halfa. The "Nasif-el-Kheir" proceeded to Dongola, and did good work on the Hannek-Merowi reach. The "Gizeh" was wrecked on her voyage up, in the Tanjur Cataract.

north of which steamers and native craft were available and useful, this delay was of little importance as far as victualling the depôts was concerned. Shortly after their arrival, the river south of Wady Halfa became impracticable for native craft, and but for the whalers the transport arrangements must have broken down. It was this necessity for getting work out of the native craft during the short period that the river remained navigable for them which caused Sir E. Wood to push them through the Second Cataract to the prejudice of the whalers. This action, although it delayed, to a certain extent, the progress of the men to the front, enabled the supplies to be forwarded by which alone the men could live.

Out of the 800 whalers delivered at Wady Halfa 90* were reserved by the General of Communications for the local convoy work. They were manned by Dongolese, Egyptian soldiers, and Kroomen. The scheme for their distribution is given in Appendix 8.

Whalers employed on the line of communications.

It was assumed in preparing this scheme that one boat load could be carried by fifteen camels; that there should be twice as many men (to act as porters) as camels; that an addition of one-third of men and camels should be made, to allow for contingencies.

It will be seen from the above scheme that this auxiliary transport, which was wholly distinct from the transport proper of the expedition—that of the whalers propelled by their own crews—was capable of passing up to Dongola an average of 132 tons a week.

Carrying power of auxiliary transport.

It should, however, be borne in mind that this transport, although auxiliary in the sense that the fighting columns were not supplied by it, was the primary transport to what may be termed the fighting base, that is, to that point in the province of Dongola where the concentration was effected, and north of which boat stores were not permitted to be consumed; and that therefore all supplies consumed before the departure of the fighting columns had to be carried up by these auxiliary means.

Auxiliary transport primary up to fighting base.

In connection with the boat transport service for the sick, the General of Communications also made arrangements for the daily transfer of 30 sick from Abu Fatmeh to the railway terminus, as shown in the table and memorandum given in Appendix 9.

Transport of sick.

Of the work done by the whalers, the following expression

Success of whalers transport

* This number was subsequently increased to 200.

of opinion by an officer who had every opportunity of judging is the best record:—

“The striking success of the expedition was the whalers. At high or low Nile, with and without wind, in good and bad weather, up or down stream, the whalers proved the most certain transport for men, stores of all kinds, and eventually all the sick and wounded were brought down in them.”*

*Railway
Transport.*

Railway Transport.

Three lines of railway were employed in the expedition.

- (1.) The line from Cairo to Assiut.
- (2.) The line from Assuan to Philce.
- (3.) Sudan railway.

Assiut line.

The first of these was the ordinary commercial line, and was worked under the Egyptian railway administration, the chief point rendered necessary by the war being the increase of sidings and improved railway communication from the station at Assiut to the Nile bank.

*Assuan-Philce
line.*

The Assuan-Philce line, 9 miles long, was originally constructed in 1874 by Ismail Pasha for the purpose of conveying the material for the proposed Khartum railway round the First Cataract. It was not under the Egyptian railway administration, but was worked by the Sudan government. There was no regular train service on it. It was taken over entirely by the English Government. The chief difficulty in connection with it was owing to the scarcity of repairing material, it being found that when in regular use, the action of the desert sand wore out the bearings with astonishing rapidity.

Thanks to the energy of Captain H. Yorke, R.E., and his assistants, the line was made capable of carrying about 380 tons of stores, or 2,000 men *per diem*.

*Sudan
railway.
Difficulties
contended
with.*

Like that from Assuan to Philce the Sudan railway from Wady Halfa to Sarras, was under the control of the Sudan Government, and was entirely taken over by the military authorities. It was completed for 33 miles and had a 3 feet 6 inches gauge; but the formation level (exclusive of bridging) was completed for 55 miles. Its extension was at once decided on when the expedition was sanctioned, but owing to lack of material, the extension was practically not begun till all the troops had passed. When the extension was com-

* Report by the General of Communications.

menced, it was carried out almost exclusively by soldiers of the Egyptian army, under command of Major A. S. Wynne (Lieutenant-Colonel E.A.).

Owing to paucity of rolling stock, which had to be transported 1,200 miles up country from Alexandria, the carrying power of this line was not at first fully developed. It was, however, always found capable of carrying as much as the other means of transport could feed it with.

The permanent way was found to be in very bad order, and some of the bridges unsafe, and a great amount of labour had to be expended in putting it into working order. The establishment of the railway servants consisted at first of only nine engine drivers and three firemen. These men were all artificers, and were therefore available for work in the shops. The difficulties they had to contend with were at first considerable, owing to—

- "A strange, difficult, and at first dangerous road.
- "Old and broken-down engines, rendered unsteady by the removal of their coupling rods, with wheels dangerously worn, and crank pins worn out of centre.
- "Inconveniently complicated engines, packed together so closely that none of the parts could be got at except from a pit, and consequently extremely difficult to clean.
- "A sandy, dusty country, in which it is impossible to keep brass bearings in order, and all the working parts of the engine became clogged with sand.
- "Heat of the climate, which rendered the working of the pump and injectors extremely difficult.
- "Bad quality of coal."*

The working part of the line was placed under Major D. A. Scott, R.E., as managing director, assisted by a superintendent of works, an assistant director, by a civilian traffic manager, and two railway staff officers. The duties of these officers were arranged as follows:—

Organization
of Sudan
railway.

The managing director was responsible for the general management of the railway, and that the line itself was kept in working order; that as many engines as possible were kept in proper repair; that all available carriages and trucks, and that all officers, non-commissioned officers and men, and

* Report by Major Scott.

civilians employed on the line were distributed and worked to the best possible advantage.

The superintendent of works was responsible to the managing director for the maintenance of the permanent way, for the watering arrangements at the different stations, and generally for all the engineering works on the line.

The traffic manager, under the managing director, was responsible for the regulation of the traffic, and for making up, loading, and despatching trains, to the best advantage to carry out the requirements of the railway staff officers.

The railway staff officers were responsible for order at the railway stations. They received all applications for transport, and in concert with the traffic manager, arranged the loading of trains.

The table given in Appendix 10 shows the actual amount of stores carried for each department during the various months.

*Animal
Transport.*

Purchase of
camels.

Animal Transport.

Simultaneously with the purchase of native craft for transport work on the Nile, was commenced the purchase of camels for work along its banks. The original order was for 1,200, with which it was intended to form two transport companies, but this number was subsequently raised to 4,000. The purchases were at first made under the personal direction of General Grenfell, through the medium of the native Mudirs between Assuan and Assiut. These officials advanced money to our agents from the treasure chests of the Egyptian Government, which subsequently recovered the amounts from England. Later on the purchase of camels was put into the hands of English officers, supplied with funds by the Pay Department. Appendix 11, giving extracts from the Report of the Director of Transport, affords information as to the purchase of camels, saddlery, the hire of drivers, and as to the forage required by the camels.

Employment
of transport
companies.

At first the transport companies were employed in assisting the construction of the railway, in portaging stores at the cataracts, in conveying stores from the railhead to the river, and in filling up the various food depôts. Afterwards when they were required at the front, the work on the Line of Communications was done by hired convoys (chiefly from the Gararish Arabs), the Sheikhs being paid by the "job." This system answered admirably, but the paucity of camels in the neighbourhood of the Batan el Hajar prevented its being very extensively carried out.

Hired donkey transport was also employed with great success; these animals being found to do more work for the food consumed than the camels, and being almost as independent of water. Donkey transport.

70 mules were employed on the Line of Communications. Mule transport.

The European establishment of a pack transport company of 600 camels is given in Appendix II, page 196.

Having thus sketched the organisation by means of which the troops and their supplies were concentrated at Korti, we may now pass on to the organisation of the various departments of the Expeditionary Force.

Commissariat Department.

The Commissariat Department of the expedition was in charge of Lieut.-Colonel E. Hughes, C.M.G., Deputy Commissary General, he being responsible only for the supply of the expedition, the transport arrangements being in the hands of Lieutenant-Colonel G. A. Furse, A.A.G., who was appointed Director of Transport.

The *personnel* of the Commissariat Department was as follows:—

Commissariat Department.

Supply and Transport divided.

Personnel of Commissariat Department.

D.C.G.	..	..	..	..	1
A.C.G.	..	..	..	..	5
D.A.C.G.	..	..	..	..	5
Acting D.A.C.G.	..	..	..	..	1
Quartermaster	..	..	..	..	7
Conductor of supplies	..	..	..	..	12
Warrant officers (clerks)	..	..	..	..	2
Staff Sergeants	{	Clerks	..	..	5
		Bakers	..	..	2
		Issuers	..	..	1
Sergeants	{	Clerks	..	..	9
		Butchers	..	..	3
		Bakers	..	..	5
		Issuers	..	..	3
Corporals	{	Clerks	..	..	7
		Butchers	..	..	2
		Bakers	..	..	4
Privates	{	Clerks	..	..	24
		Butchers	..	..	11
		Bakers	..	..	13

Senior commissariat officer not at Head Quarters.
Scale of rations.

The experiment was tried in this expedition of detaching the Senior Commissariat Officer of the expedition from the Headquarter Staff and attaching him to that of the General Officer commanding the Line of Communications.

The scale of rations authorised for the campaign is given in Appendix 12. When on march by road or river the troops ate biscuit and preserved meat, but it was arranged at nearly all stations that they would draw bread and fresh meat as they passed through.

Dates were frequently issued as a vegetable ration (1 lb. = 1 ration), or as an extra when sugar fell short. The troops ate them both raw and cooked into a sweet stew.

The spirit ration was issued as far as Wady Halfa, but only rarely beyond that place, and never south of Abu Fatmeh.

Fresh meat was obtained by means of a contract with a Cairo merchant for supply of live cattle and sheep. The oxen for Assuan could be bought in Upper Egypt; but the supply in that district was not plentiful, and hence the animals for consumption at Wady Halfa were Russian oxen, sent up alive by train and in barges from Alexandria. This contractor sent agents to Dongola to buy cattle, who were able to buy enough for the purpose. The animals came from Kordofan and other inland parts, to the markets on the Nile.

There was also a contractor to bake bread; but as he depended upon the military authorities to bring up his flour from Assuan and to look after his bakers, the contract proved a failure.

A report on the whaler rations, which formed so remarkable a feature in the commissariat arrangements of the expedition is given in Appendix 13. Actually these rations were not generally brought into requisition till the later phase of the campaign when the columns advanced beyond Korti. In the statement shewing the position of whaler stores on October 28th, given in Appendix 31, are detailed the number of cases laid down as the equipment of each boat, and their contents.

Medical comforts.

The provision of medical comforts offered considerable difficulty. Owing to the transport difficulties it was decided that only the following should be taken south of Abu Fatmeh, as a provision for six months for 10,000 men:—

	Estimate.	
	1st.	2nd.
Brandy doz.	150	176
Port or Tarragona "	304	304
Champagne "	10	37
Condensed milk tins	16,220	40,050
Arrowroot lbs.	112	975
Oatmeal "	600	600
Soups tins	600	3,125
Extract carnis ½lb. pots	1,000	3,275
Cocoa and milk tins	250	2,950
Sago lbs.	112	975

The first of the above estimates was made by a Committee held in Cairo in September, 1884, consisting of the Chief of the Staff, the Principal Medical Officer, and Senior Commissariat Officer in Egypt. The second estimate was made by the Principal Medical Officer of the expedition, so late as November, at Wady Halfa, and is a striking illustration of how difficult it is to obtain a basis on which to frame orders for the supply of medical comforts for an expedition.

The supply of fowls, eggs, and milk became a serious matter as early as October, 1884. The numbers sick in hospital at Wady Halfa had grown to from 300 to 500, and from the nature of their disease, had nearly all to be treated upon either milk or chicken diets. The fresh milk was obtained from a contractor, who collected from all the villages for a long distance round, and it was supplemented by condensed milk. The fowls and eggs had to be brought up from Assuan to Wady Halfa by steamers. The same thing happened again in Korti, to which place fowls and eggs were brought up from Dongola by steamer.

The way-bill system was carried out in its entirety all along the long line of communications, according to regulations, with the very best results. Whenever from any cause the triplicate way-bills were not used, uncertainty and loss nearly always occurred. Each officer, or warrant officer, or non-commissioned officer in charge of a post, was made a separate accountant, and the supplies were way-billed from each accountant to the other. Each accountant sent his accounts to the officers in charge of accounts at Cairo. In

Way-bill.
System on
the line of
communica-
tions.

spite of there being at one time as many as 27 different posts and accountants, who between them rendered upwards of 200 accounts, this course was found the simplest, and ensured accounts being rendered, there being no time for compilation of district accounts on active service.

Ration
returns.

The new regulations for the use of War Office Book 55, for ration returns as final vouchers, were fully put in force with much advantage.

Imprests.

As regards imprests, the principle adopted was that no Commissariat Officer should hold an imprest wherever it was possible for a paymaster to hold the money. Appendix 14 contains a copy of the instructions drawn up, whereby all but the very smallest payments were made by the District Paymaster at each station where such an officer was present, and the system was found to answer admirably.

Supplies
recorded
in rations
put in
pounds.

"The system was adopted on this expedition of making out states, reports, telegrams, &c., in rations and not in pounds. It is a plan conducive to much simplicity, as multiplication of figures can be avoided by expressing the quantities in thousands of rations (which is near enough for all practical purposes) and any one can see at a glance or by the simplest of calculations how many days' supply exist for a given number of troops at any spot."* It was afterwards recommended that this method of calculation be extended to all accounts and ration returns in the field, with a view to saving trouble in calculation.

A copy of a state rendered in this manner to the Chief of the Staff will be found in Appendix 15.

*Ordnance
Store
Department.*
Personnel of
department.

Ordnance Store Department.

At the commencement of the expedition the Ordnance Store Department, which was in charge of Lieutenant-Colonel T. Pease, A.C.G.O., consisted of—

3 Officers,
3 Conductors,
15 Rank and file,

a strength insufficient even for the small force originally proposed for the expedition; it was later on increased to—

* Report by Colonel Hughes.

10 Officers,
13 Conductors,
5 Staff-sergeants,
10 Sergeants,
90 Rank and file;

but even with this number the strain was very heavy on the department, the duties of which were of an extraordinary character for the following reasons:—

“ 1st. The equipment of the force was different to that of any previous army. By far the major part of the cavalry, as also the artillery, marines, bearer company, and the transport, were mounted on camels, the horsed cavalry but few, the infantry many, and all quite at variance with the established proportions of the respective arms employed in warfare; thus the regulations for the provision of the stores required by the service (as recently tabulated) formed no guide for this campaign.

Colonel
Pease's
report.

“ 2nd. The department was unprepared in every respect for a campaign, the original estimate of which was 3,500 men, being suddenly augmented to 10,000; for it is apparent that provision which would have been abundance for the former would prove starvation for the latter. First, there was a paucity of Ordnance Store Officers (only three besides myself), conductors (3), and men (15); secondly, the absence of a sufficiency of the service equipment; and thirdly, the necessity for the manufacture of a large quantity of special stores, including riding, pack, and harness equipment for camels.

“ 3rd. Added to this, transport was scarce and tedious; even the main base, in point of time occupied in transit of stores, was farther from Alexandria, than England is from India; then the Nile Flotilla taking priority thereof, food being alike imperative and immediate, and hospital equipment an absolute necessity, the reserve ordnance stores could be pushed forward but slowly; and, although all wants were foreseen, it was for a long time a stern chase, and until the middle of November (just prior to the advance of the last three infantry battalions), when the manufacture of the special gear for the Cameliers was completed, quite a hand to mouth equipping.

“ 4th. Wherever there was an Ordnance Store Dépôt, the resources of the villages, in material and labour, were utilised to the utmost in fitting and repairing camel gear, making bedsteads, bed linen, and appurtenances conducive to the health and comfort of the troops.

(S.C.1)

G

" 5th. The equipments of the hospitals (both station and field) were special, and in various sized units to meet the requirements of the station, or the size of the rest camps (or small sick dépôts): the total provision far exceeded in quantity that apportioned by regulation to the service in the time of war, hospital equipment having been furnished for 2,500 beds.

" 6th. The great point constantly pressed for was the necessity of keeping reserves down to the lowest limit, owing to the difficulty of transport. Even in the easiest stage of the line of communications, each package, from the time of leaving Cairo till reaching Sarras (the base for Halfa), was conveyed by three railways and two boats, whereas beyond that the shipments and portages were numerous and difficult; yet, considering the opportunities for peculation, the losses of the Ordnance Stores were small as compared with those of other departments."*

The table given in Appendix 16 shows the callings of the Non-Commissioned Officers and men of the Department.

*Medical
Department.*

Medical
arrangements
on very large
scale.

Medical Department.

Owing to the great length of the Line of Communication the medical arrangements were necessarily on a very large scale, wholly out of proportion to those for a similar force under ordinary circumstances.

Hospitals.

Besides a moveable field hospital of 110 beds, divisible into four sections, arrangements were made for establishing hospitals at different points along the line of communications. The Ordnance Store Department was ordered to pack stores for these hospitals, for units of 25 beds each. The positions and scale of these hospitals are set out in Appendix 17.

The *personnel* of the moveable field hospital is given in Appendix 18.

Conveyance
of sick.

Arrangements were made for conveyance of sick from Abu Fatmeh to Sarras by boat, and from Sarras to Wady Halfa in covered trucks containing four stretchers and fitted on Zavoavski's method.

The following tents were forwarded to the south of Halfa for the hospitals on the line of communication:—

* Report by Lieutenant-Colonel Pease.

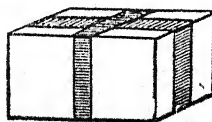
Marquees	..	..	..	65
E.P. tents	..	..	..	18
Mountain service tents	..	..	..	29
Double circular	"	..	..	11
Other tents	..	..	..	4
Sepoy palls	..	..	..	21
Lascar "	..	..	..	15
Tentes d'abri.	..	..	..	36
Total				199

This being exclusive of the equipment of the moveable field hospitals and the bearer companies.

Nursing sisters were posted at Assuan and Halfa.

The stores for the field hospital were packed in 500 boxes of the following dimensions, 28 inches \times 12 inches \times 14 inches, and were marked by a 2-inch red band on each side of them, which enabled them to be easily recognised, even when piled among other stores.

Stores for the field hospital.



Each regiment had the medical equipment detailed in Appendix 19. In each whaler there was a medical comfort box. A "first field dressing" was also served out to every soldier in the force.

Medical provision for each regiment.

To enable commanding officers to trace men of their regiment admitted to hospital, the following instructions were issued to medical officers, and also published in orders for general information:—

Return of sick.

"With a view to enable commanding officers to trace officers and men of their corps who may be admitted to hospital, a return, in duplicate, on a special form* (that will be issued to medical officers) will be made out weekly by each hospital, for the men of each regiment or corps therein. One copy will be sent to the Statistical Officer, Medical Staff at Cairo, to be filed in his office, and one to the commanding officer of the station. The officer commanding the station will transmit these returns to the headquarters of the several corps concerned.

* See Appendix 20.

"If this system is properly carried out, officers commanding corps will thereby know the various stations of the sick who are detached from headquarters.

"In the rare instances in which this system might fail, the commanding officer should apply to the Statistical Officer, Medical Staff at Cairo, who will furnish the necessary information from the returns filed in his office."

Railway
transport of
sick.

Steps were taken early to put the railway transport of sick from Assiut to Cairo in a satisfactory condition.

An officer of the Royal Engineers and a medical officer were associated for this purpose, and under their supervision six railway carriages were fitted up on the principle followed in India on the Bengal Railway.

Tanks, a kitchen, surgery, &c., were constructed, and stretchers for helpless cases were laid on springs attached to the floor of the carriages.

The work was done in the workshops of the Egyptian Government Railway at Cairo, but the springs were so strong and imperfectly tempered that it was found better to adopt stretchers on Zavoavski's plan, and this was done, and gave much satisfaction. The system consists in suspending the service pattern stretcher by ropes from the roof or sides of carriages and goods wagons. This almost prevents altogether the effect of vibration from the carriage being communicated to the patient on the stretcher.

The same system was also put in force on the short railway from Assuan to the south end of the First Cataract; and at a later date on the Wady Halfa-Sarras Railway.

General trans-
port of sick
and wounded.

The question of the transport of sick and wounded was not entered into until the Principal Medical Officer, Deputy Surgeon-General J. O'Nial, arrived at Halfa, when a Committee composed of a Naval, Royal Engineer, and Medical Officer, was formed to report on the best means to effect the object in view. Their proposals, which were accepted, are given in Appendix 21.

Field inspec-
tors.

In consequence of the length of the Line of Communications four medical officers were appointed field inspectors and detailed for the different sections of it. They had general supervision of the medical arrangements in their districts.

Medical
arrangements
for troops
in whalers.

As it was found advisable not to send more than a company of a regiment at a time up the river in whalers, it was decided that a medical officer should proceed with every fourth company.

Men reporting themselves sick in boats were to be treated if possible in their own boat, and, if owing to the gravity of the case this was not possible, in the boat in which the medical officer in charge was, where the serious cases could be placed on stretchers.

There was also a stretcher to every company of each regiment, for the accommodation of very bad cases.

The *personnel*, equipment, and transport of the Camel Bearer Company for carriage of 200 sick, divisible into four sections, was fixed as shown in Appendix 22.

Camel Bearer
Company.

Veterinary Department.

*Veterinary
Department.*

The *personnel* of the Veterinary Department consisted of one Inspecting Veterinary Surgeon, one Principal Veterinary Surgeon, and eight Veterinary Surgeons, including one belonging to the Egyptian army.

An ample supply of medicines was provided, but experience proved that nothing was better for sore back (the prevailing ailment) than Katran, the juice of the poisonous Dead Sea apple.

There being no Army Veterinary Corps on the lines of the Army Hospital Corps, acting farriers and dressers had to be provided from the ranks of the mounted troops.

Telegraphs.

Telegraphs.

At the commencement of the expedition a telegraph line ran along the left bank of the river from Cairo to Debbeh beyond which point it had been destroyed by the Dervishes. After the victory at Korti, however, it was repaired by the Mudir of Dongola as far as Merowi. A single wire of the line was rented by the Army Telegraph Department, from the Egyptian Administration. As far as Wady Halfa the maintenance of the system remained in the hands of the Egyptian Government, and thence was under the Sudan Administration who handed over to the Army Telegraph Department, its entire staff, consisting of 1 European, 58 natives, 6 of whom were Arabic telegraph clerks, and 2 of whom could signal in European languages. The total length of connected line was 1,150 miles. The system of working along this greatly extended system was that known as "single current with relays" with translations at Assiut, Assuan, and Halfa. Extracts from reports upon the Army Telegraphs of the Nile Expedition are given in Appendix 23.

Existing
telegraphs,
system
employed.

Personnel of
Telegraph
Department.

Colonel C. E. Webber, C.B., R.E., was appointed Director of Army Telegraphs.

The *personnel* of the Department consisted of 6 officers, and 118 non-commissioned officers and sappers of the Telegraph Battalion Royal Engineers. Twelve of these were specially enlisted men from the Post Office Telegraph Department, and all the officers and men had been previously trained upon the postal telegraphs.

Stores

Four hundred and fifty-six miles of wire and a large equipment of instruments, stationery, batteries, and other necessities, accompanied them.

Postal
Arrangements.

Postal Arrangements.

The trained staff available for postal service consisted of the Chevalier Santoni, nine Egyptian employés, and three or four British non-commissioned officers who had worked in the Post Office at Cairo. These men were reserved for the three principal Post Offices, the intermediate offices being served for the most part by convalescent soldiers.

Modes of
conveyance.

Mails were made up at Cairo for battalions and corps on information telegraphed to the Commandant of the base. A parcels post was established under the superintendence of the Commandant of the base.

The mails were carried from Cairo to Assiut by railway; Assiut to Assuan by steamers; Assuan to Philœ by railway; Philœ to Halfa by steamers; Halfa to Sarras by railway; Sarras to Abu Fatmeh by camel; and Abu Fatmeh to the south by camel.*

Contracts.

Separate contracts were made for the carriage of letters parcels, and newspapers, by camel; three camels sufficed as a rule for the letters, and ten for the parcels, &c.

Local posts.

Local posts were also organised by the military authorities on the Line of Communications; the means of transport being almost entirely camels, sometimes hired, but generally government property. The post riders were either natives or Egyptian soldiers.

Post offices.

Regular post offices were opened at Dongola and Korti and also a transit office on board the "Lotus," by the Egyptian postal authorities; in which a complete postal service was established, letters could be registered and money orders obtained.

* Towards the close of the expedition by steamers.

Base.

A distinctly new departure was taken in the Nile Expedition in separating the command of the base from that of the Line of Communications, the sphere of the latter being Assiut and the south of it, of the former, north of Assiut. The command of the base was confided to Lieutenant-Colonel Ardagh, C.B., R.E., A.A.G.

At Cairo, the base of the expedition, a *depôt* was left of each regiment, chiefly composed in the first instance of weakly men, unfit for hard service, but recruited by drafts from England. These *depôts* were aggregated into a command with the usual staff, and quartered at the Kasr-en-Nil barracks. The post of Commandant of the *depôt* was in the first instance held by Lieutenant-Colonel W. J. Gillespie, Berkshire Regiment, and subsequently by Lieutenant-Colonel W. F. Cavaye, Royal Sussex Regiment.

The correspondence, demands, &c., of the expedition were carried on in the office of the Commandant of the base, who was the principal staff officer of the expedition at Cairo, the multifarious nature of whose duties is best shown in his report, drawn up in July, 1885, at the conclusion of the campaign. This is given in Appendix 24.

Base.

Command of
the base.

Regimental
depôts at
Cairo.

CHAPTER IV.

EVENTS FROM LORD WOLSELEY'S ARRIVAL AT CAIRO TO HIS
ARRIVAL AT DONGOLA.

September
11th, 1884.
Battle of
Korti.

ON the 11th of September, telegrams were received at Cairo from Lieut.-Colonel Colville and Major Kitchener, stating that the Mudir of Dongola had gained a decisive victory over the rebels at Korti, killing Sheikh Mahmud, the Mahdi's Emir of Dongola, and El Heddai, the leader of the revolted Shaikiyeh. This victory placed the whole of the Mudirieh of Dongola up to the foot of the fourth cataract in the hands of the Government, and obviated the necessity of preparing for any offensive operations until the expedition had passed Merowi.

Distribution
of men and
supplies.

The one thing to be thought of, therefore, was the concentration of troops and supplies at Dongola, with all possible despatch. It may be interesting at this point to note how the troops were echeloned between the Egyptian frontier and England. This distribution is given in detail in Appendix 25. The situation was at this time such, that although the men were ready at Cairo, the bulk of the stores was still on the way out from England; and as the men could not be forwarded without their supplies, the transport was for the most part lying idle, both General Grenfell and Lieutenant-Colonel Maurice reporting that all the commissariat stores at their respective stations, Assuan and Assiut, had already been forwarded to the front.

Extension of
railway.

At Assiut a considerable block was caused later, when stores began to arrive, by the paucity and defective character of the sidings, which made it impossible to unload stores as fast as they arrived by train from Alexandria. This defect was, however, remedied as soon as possible.

Urgent necessity was also discovered for the extension of the Wady Halfa railway which, on Lord Wolseley's arrival at Cairo, extended as far as Sarra.

It was at first intended to march troops and stores from this point to the head of the Semneh Cataract, a distance of nine miles, and then embark them in native boats; but the rough character of the road made it almost impracticable for

camel transport, and on Sir E. Wood representing the advantages of extending the line to a point 12 miles from Ambako, authority for this extension was obtained from the Secretary of State for War. Unfortunately, however, when the policy of evacuating the Sudan had been determined on, all surplus railway plant had been removed from Wady Halfa to Assuan by the Egyptian authorities, and by the time authority for the extension was obtained all available river transport was employed in forwarding other stores.

On the evening of the 27th of September, Lord Wolseley and the headquarter staff left Cairo by rail for Assiut. He reached Assuan on the 1st of October.

Lord
Wolseley's
departure
from Cairo.

Stores by this time had begun to come in well, and on this day the first consignment of boats and boat stores left Alexandria for Assiut. In Appendix 26 is shown a detailed statement of the supplies available on the 30th of September. Lord Wolseley arrived at Wady Halfa on the 5th of October.

Considerable difficulty was experienced at this time in procuring a sufficient number of riding saddles for camels. Out of 1,200 baggage, and 1,700 riding saddles required, only 500 of the former and 150 of the latter had been obtained by the middle of September; and although the Egyptian Government had promised more, the date of their delivery was so uncertain that it was doubtful whether it was worth while to continue the purchase of camels until there was a greater certainty of getting equipment for them.

Difficulty in
procuring
saddles for
camels.

On the 20th September the 1st Battalion Royal Sussex Regiment, under command of Colonel J. O. Vandeleur, arrived at Dongola, whither they had been conveyed from Sarras in nuggers.

Arrival of
Royal Sussex
and of Sir
H. Stewart at
Dongola.

On the 29th of September Sir H. Stewart arrived at Dongola, accompanied by the first detachment of the Mounted Infantry, and took command of the troops. He was received with much discourtesy by the Mudir, who, in spite of repeated messages from Sir H. Stewart that his business with him was most important, refused to see him for two days, and then only after the Bairam reception, at which the meanest beggar can claim an audience.

This official was brought so prominently forward during the progress of the Nile expedition and the events which preceded it, that it may be well to glance briefly at his character and antecedents.

Account of
the Mudir of
Dongola.

Mustapha Yawir was a Circassian by birth; but nothing is known of his parentage. In the year 1846, when he was

eight years old, he was brought to Egypt by a certain Ismail Agha, a slave dealer, and sold to the Khedive Abbas Pasha. Shortly after his arrival, Mustapha was attacked with some disease of the brain, which lasted in an acute form for about four years, and had the effect of rendering him for the time totally bald. It is believed that his mind never wholly recovered the effects of this attack.

* On the death of Abbas Pasha in 1852, Mustapha Yawir became the property of El Hami Pasha, the son of Abbas, who, shortly afterwards leaving for Constantinople, gave orders that Mustapha and his other Mameluks should be placed in a school at Abbasiyeh, which had been expressly built for them. In 1854 El Hami Pasha died, and the school with all its inmates became the property of Said Pasha, who sent two-thirds of the scholars to other establishments at the Citadel and Alexandria. Mustapha Yawir was sent to the latter town, and remained there three years, till in 1855 he was expelled on account of his addiction to drink and the smoking of hashish. At this period he showed a great love for singing, and was regarded by his comrades as a madman. Mustapha Yawir was next sent to a military school in the citadel, where the military discipline produced a further change in his mind, which then permanently bent itself to religious speculation. So noticeable was this that he was surnamed by his comrades the "Dervish."

On the accession of Ismail Pasha in 1861, that Khedive at once commenced a crusade against the Mameluk class, and in 1864 sent Mustapha Yawir and the whole of his companions to the Sudan. Before starting, Mustapha was given a commission as a lieutenant, but was promoted to the rank of captain before his arrival at Khartum.

From Khartum he was sent to Kordofan, where he was made a Mahun (delegate) of the Mudirieh, and remained there several years in that capacity. In 1877 he was appointed Mudir of Dongola, and the independence which this position gave him allowed him to devote himself entirely to his religious studies and devotions, by which course he obtained a reputation for piety little inferior to that of the Mahdi himself, a reputation which he did not scruple to use for political ends.

On the arrival of General Gordon in 1884, Hussein Pasha Khalifa was appointed Mudir of Berber and Dongola, and the services of Mustapha Yawir were dispensed with. He was, however, soon reinstated. The Mahdi also appointed

him Emir of Dongola, and, for a time, it was doubtful which side he would join; but eventually, on his being superseded by another Emir, he threw in his lot with the Egyptian Government. His first hostilities with the Mahdiah proper led to the victory at Korti, when two English officers, Lieut.-Colonel Colville and Major Kitchener, were actually in his capital, and British troops were daily expected.

Mustapha Yawir's character may be briefly summed up as a mixture of vanity and fanaticism, and although usually a man of considerable diplomatic capacity, it may be safely said that in the moments when either of these passions mastered him, he was irresponsible for his actions and wholly regardless of consequences.

Sir H. Stewart was eventually received by the Mudir after the Bairam reception, on the 1st of October, and at once delivered a complimentary message from Lord Wolseley, informing the Mudir that he had been ordered by Lord Wolseley to ascertain exactly what supplies were to be obtained in the province, in order that he might know how many troops he could send up, before sending supplies for them from the north. The Mudir replied that the province could easily supply all troops sent, but could give no exact estimate of quantities, or name any day by which they could be brought to Dongola. He, however, promised to do his best. The interview was a very cordial one, and no allusion was made by Sir H. Stewart to the Mudir's previous incivility, he being of opinion that for the time being it was absolutely necessary to humour him. Writing to the Chief of the Staff on the 13th of October, he said:—"I hold that he is a very powerful man in his own province, and, indeed, an autocrat, and that whether here or at Merowi, so long as he is in his province, it would be a hopeless task to try to work without him. As the expedition moves on, and as military necessities entail his accepting a more subordinate position than his present one, I believe it will become a question as to whether it would not be advisable that he should take a trip to Cairo to be installed as a Pasha, and then subsequently brought back if advisable, to be used in the final settlement of the Sudan. As long as he is here one could not work without him, but once gone, I think anything could be done in the matter of supply, &c., with his deputy."

On the date of Sir H. Stewart's arrival at Dongola, letters were received at Massawa from General Gordon, dated July 30th and 31st, urging that any relief expedition should come

Sir H.
Stewart's
reception by
the Mudir.

September
30th.
Letters from

General
Gordon and
Mr. Power
dated 31st
July.

by the Nile route, and follow the right bank from Berber to Khartum, but if from any reason this route was impracticable the expedition should come by Massawa, Senhit, and Kassala. He expressed fears that in any case it was too late.

A letter was also received from Mr. Power, the British consul at Khartum, dated July 31st, saying that they had only food for two months.

On the 16th of September an undated telegram had been received from General Gordon, which concluded, "Seeing that the rebels have already captured Berber, I intend, please God, to send the necessary troops to retake it, and to re-establish communication with Dongola and Egypt."

General
Gordon's
plans.

In another telegram received the same day he said, "On my arrival at Khartum I found it impossible to withdraw the soldiers and *employés* to Egypt, in consequence of the insurrection of the Arabs and the interruption of the communications, I therefore asked for reinforcements. As yet they have not arrived, and thus have caused the events at Berber. I had previously warned Egypt to pay attention to that town. I will consider in what way it may be recovered from the rebels, or in what manner troops could be stationed there for a period of two months during high Nile. After that time, if reinforcements do not arrive, without doubt the same events will occur again in Berber as have already taken place there, and once more the troops will be destroyed. . . . I shall send Stewart Pasha, and Mr. Power, the English consul, with the troops to Berber to open communications with Dongola, and carry on the necessary discussions respecting the Sudan."

Colonel
Stewart's
departure
from
Khartum.

In a telegram dated August 24th, and received on September 18th, General Gordon stated that he had already sent off Lieut.-Colonel Stewart, and the English and French consuls, with regular troops and Bashi-Bazuks to take Berber. The substance of these telegrams having been conveyed to Major Kitchener, that officer at once wrote to Lieut.-Colonel Stewart advising him to follow the desert route from Berber. This letter unfortunately did not reach him, and on the 2nd of October a native arrived at Ambukkol who informed the Vakil of the Mudirieh that General Gordon had bombarded Berber and then returned to Khartum, leaving Lieut.-Colonel Stewart to proceed northwards. He stated that Lieut.-Colonel Stewart's steamer was stuck on a rock in the Monasir country. The Vakil at once telegraphed this news to the Mudir, and

sent on the messenger to Debbbeh, where he was examined by Major Kitchener, who had been sent there immediately after the battle of Korti. Major Kitchener at once telegraphed the information to Lord Wolseley.

On the 4th of October news was received that, with the exception of four persons, the whole of the party on Lieut.-Colonel Stewart's steamer had been murdered by Suliman Wad Gamr, the Sheikh of the Monasir.

News of
Colonel
Stewart's
murder.

The steps taken in connection with this event will, perhaps, best be described by quoting the correspondence which ensued, which also helps to elucidate the Mudir's character.

On the 6th of October Sir H. Stewart telegraphed from Dongola to Lord Wolseley at Wady Halfa:—

"Mudir is anxious I should telegraph his opinion regarding news from Berber. He states he cannot rely on population at Merowi and district, and thinks garrison should be increased to 500 to hold Merowi, or advance to afford assistance to steamboat if necessary. Mudir has now at Merowi 160 infantry, at Debbbeh 300 infantry and 100 dromedary men. He has here 160 infantry and 60 dromedary men. Dromedary men have dromedaries. Mudir urges he should be allowed to reinforce Merowi to that number, or that we should. If he was allowed to go it would facilitate arrangements here. I am quite unable to discover motive of messengers in coming from Ed Damer direct to Dongola for the sake of bringing news, especially as they are said to be enemies. If you wish to send force to Merowi, we could organise, by means of dromedaries, ponies, donkeys, one steamer, one diahbieh, and small boats, a force of 500 men to proceed to Merowi with supplies for one month."

Negotiations
with the
Mudir.

On the same day Lord Wolseley replied:—

"Ask the Mudir to proceed at once to Merowi, taking with him all available native troops. I do not wish any of our officers to accompany him. Keep me informed of news, and inform Kitchener of Mudir's movements."

Sir H. Stewart answered this telegram from Dongola on the 7th October thus:—

"Have had interview with Mudir, and he says all right, and has asked for a copy of telegram. The message I sent to you was exactly the message he wished me to send. But still, I do not consider that he liked the answer at all; most peculiar man to deal with. I have no reason for saying so, but expect he will refer to Cairo before carrying it out. . . . I cannot

send definite information as I could not question him in any way. I stand only as deliverer of his messages to Lord Wolseley and Lord Wolseley's to him. Have written to him to inform me of his movements that I may inform Kitchener."

On the 8th of October Lord Wolseley sent the following telegram to Sir H. Stewart, to be communicated to the Mudir :—

"I think it very important the Mudir should proceed to Merowi with all his available troops, with the least possible delay, and that he should use every endeavour to obtain release of any Europeans who are prisoners, that were with Stewart's party. Ask him if he could induce any tribe to retake European prisoners for sum of money, say 5,000*l.* or 10,000*l.*; or would those in whose hands they are, give them up for that amount. Inform Kitchener when Mudir starts, and do your utmost civilly to get him to start as soon as possible. When Wilson reaches Dongola tell him to use his own discretion of going on with, or after Mudir to Merowi."

On October 9th Sir H. Stewart telegraphed from Dongola :—

"Mudir has given me a telegram, just received from his Vakil at Ambukkol, who states that messenger sent to Wady Gamr has returned, and reports that there were on steamer, Nicolas the Greek consul, and 40 persons, Europeans and Mohammedans. After the steamer grounded, the consul gave the inhabitants presents, and soon afterwards, Suliman and his men attacked the party and killed nearly all. They had on board also heads of Emirs killed near Khartum."

Sir H. Stewart also wrote from Dongola to the Chief of the Staff :—"I feel that the want of information in my hands placed me at some little disadvantage with the Mudir for a day or two, as I am confident he thought I was refraining from talking with him about the supposed disaster to Stewart. This was all cleared up after the receipt of Lord Wolseley's telegram. I do not know whether you realise the position of the Mudir here, and not only here but in his province. He is an autocrat, and the more I see of him the more I am convinced that his servants implicitly obey him. I believe that you would have had fuller and earlier information if Kitchener had remained here rather than at Debbeh. The Mudir gives me very plainly to understand that Kitchener receives only such information as he permits his Vakil to

First details
of wreck of
General
Stewart's
steamer.

give him, and if this is so, then it might have been better to receive all one could from the Mudir himself. Directly Sir C. Wilson arrives I will explain fully to him what I think of the Mudir's views. My own idea is that he is personally attached to Colville, and genuinely likes him, and that the best thing Wilson could do would be to depute Colville to accompany the Mudir and send him all information. Of that, however, he will be able to judge for himself after being here a day or so. I am, of course, doing all I can to get the Mudir to start for Merowi, and I hope he may go shortly. This morning the dromedary men are all coming in from their villages."

On the 10th of October Lieutenant Poore, R.N., arrived at Dongola in the s.s. "Nasif-el-Kheir." The report of his voyage is given in Appendix 27. On the following day Sir C. Wilson arrived at Dongola, accompanied by Major F. G. Slade, R.A., D.A.A.G., and on the same day had an interview with the Mudir, after which he sent the following telegram to Lord Wolseley:—"Mudir says he has no boats to take up troops to Merowi, and expressed disinclination to proceed without them. He said, however, he would do so if you wish. He is evidently sore at having been recalled from Merowi,* and wishes carte blanche given him if he goes up again. Shall I take Mudir without troops. If he cannot get ready to start by to-morrow I will go without him."

October 10th.
Arrival of
Nasif-el-
Kheir at
Dongola with
Sir C. Wilson.

In consequence of this news Lord Wolseley telegraphed from Wady Halfa to the Mudir:—

"I have ordered Sir C. Wilson to proceed to Merowi at once in the 'Nasif-el-Kheir.' I hear your Excellency's steamer requires repairs, and will not be ready for some time. I hope your Excellency will be able to get up with Sir C. Wilson in the 'Nasif-el-Kheir,' which could tow some boats with your troops."

Sir C. Wilson
ordered to
Merowi.

And to Sir C. Wilson:—

"See Mudir at once and urge him to start forthwith. If he won't go at once, you must go to Merowi in 'Nasif-el-Kheir' to see what can be done there. You might take a small party of say one or two officers and about 25 British soldiers with you in steamer."

On 12th October, Sir C. Wilson wired from Dongola:—

"At interview with Mudir this morning he declared he had no troops at Merowi. This is contrary to what his deputy

Refusal of
Mudir to
move.

* After the battle of Korti the Mudir was preparing to advance on Merowi, but was ordered by the Egyptian Government to return to Dongola.

tells Stewart and Colville. Mudir will not go up without all his troops, and wishes to know what he is to do when he gets to Merowi. I told him you wished him to push on his troops and occupy Merowi. I believe he will act when I am gone, and am leaving Colville to press him on and accompany him. Suggest Khedive being asked to order Mudir up to Merowi with his troops. I leave in steamer in an hour, and shall go to Merowi to see real state of case and show steamer. Please telegraph to Debbah any instructions. Shall keep Stewart informed."

A second telegram from Sir C. Wilson at Dongola, on 12th October, said :—

"Have reason to believe Mudir did not speak truth about Merowi. He has ordered some mounted men to start to-morrow."

Departure
of Sir C.
Wilson for
Merowi.

On the 13th of October Sir C. Wilson left for Merowi on the "Nasif-el-Kheir," accompanied by Major Slade, and by Captain G. Harden, with 25 non-commissioned officers and men of the Royal Sussex. The troops took with them two months' supplies.

On the same day two telegrams were sent to Lord Wolseley by Sir E. Baring. The first ran :

Mudir
ordered to
Merowi.

"Nubar Pasha has again telegraphed to the Mudir telling him to go to Merowi. Major Schaefer is the bearer of a letter to the Mudir from Nubar Pasha, which dwells on his services in complimentary terms and tells him to obey your orders in everything. It would be desirable that Schaefer should go on to Dongola as fast as possible."

The second said :

"Since sending my first telegram of to-day, a further one has been received from the Mudir of Dongola in which he expresses a strong opinion of the danger of advancing to Merowi without a sufficient military force. Nubar Pasha will telegraph to him again, and tell him to obey your orders, in everything. You will, no doubt, fully consider the risk which it will be advisable to allow Wilson to run."

On the 15th of October, Lord Wolseley telegraphed from Wady Halfa to Sir C. Wilson, who had reached Debbah :

"Mudir again telegraphed to Nubar Pasha, expressing strong opinion of danger of advancing to Merowi without

sufficient military force. Nubar will desire him again to obey my orders, but in meantime be most cautious."

On the 20th of October, Sir C. Wilson sent the following telegram from Ambukkol :

"Went to foot of rapid below Dukeiyat. Steam launch ran on rocks 70 miles higher up, in Monasir country, which is still in rebellion ; all hands said to have been treacherously murdered by Monasir. . . . Bodies seen floating down river 20 days ago. Evidence as to Stewart conflicting, but fear worst. No action could have saved party. Have sent messengers for information, and to try to release prisoners."

Sir C. Wilson
at Merowi.

Sir C. Wilson returned with his party in the Nasif-el-Kheir to Dongola.

Although the full details of the disaster were not known for nearly four months, the present is probably the most convenient place to describe it.

Account of
Colonel
Stewart's
murder.

On the 10th of September, 1884, the small steamer "Abbas" left Khartum, having on board Lieutenant-Colonel Stewart, Mr. Power the acting British Consul, M. Herbin the French Consul, Hassan Bey of the Telegraph Department, who acted as interpreter, 19 Greek merchants, 5 artillery men, 7 native crew, 4 Arab women, 4 slave women, and a few male slaves, about 40 souls in all. Also General Gordon's diaries and cypher books, which he was sending down, in the belief that Khartum would be taken before any relief could reach it. Colonel Stewart was instructed to inform the authorities in Egypt of General Gordon's views on the situation, which, owing to difficulties of communication, it had been impossible to send in writing.

The "Abbas" had also in tow three "nuggers," or native sailing craft, laden with Jews, Syrians, and Greeks, who had been allowed to take advantage of this means of escaping, on the distinct understanding that should Colonel Stewart consider their presence in any way a source of danger to the "Abbas" he had full liberty to cut them adrift.

The flotilla was accompanied by two armed steamers, the commanders of which had orders to accompany the "Abbas" beyond Abu Hamed.

Berber, the passage of which had been considered the gravest danger, was passed without difficulty, and although hostile demonstrations were frequently made from the banks.

(S.C.1)

no actual danger was encountered until a point was reached, half-a-day's journey beyond Berber. There it was perceived that the flotilla was being pursued by a steamer from Berber, which had been captured by the enemy some months previously, and which, as was subsequently ascertained, had on board Abd-el-Majid el-Kalik,* the Wakil of Berber, Abd-el-Majid Khojali,† nephew of Mohammed-el-Kheir, and Mohammed Wad er-Reis, then and on subsequent occasions in command of the regular black troops of the Dervishes.

Knowing the very great importance which General Gordon attached to the success of his mission, Colonel Stewart at once decided to cut the nuggets adrift, and proceed on his journey unimpeded; he, however, ordered the two escorting steamers to fall back and afford them what protection they could.

The "Abbas" then proceeded on her way, passed without difficulty the cataract of Mogratt and entered the reach of smooth water 15 miles in length, which lies between Mogratt Island and the intricate navigation in the neighbourhood of Kirbekan. Colonel Stewart probably then assumed that all danger was at an end. On either bank was a wide expanse of treeless, sandy desert, destitute alike of cultivation or inhabitants, and bearing no rock or shrub behind which an enemy might lurk; immediately before him was the broad, smooth river, deep and silent, without a ripple on its surface to tell of hidden dangers. It is true that the cataracts of the Monasir were still to be passed, but even if by any ill chance an accident should befall the "Abbas" in these rapids, it would not be until they were almost within the Mudirieh of Dongola, the inhabitants of which were supposed to be friendly. During the whole of the 17th of September the "Abbas" steamed steadily onward, meeting with no impediments, and seeing no Arabs, hostile or otherwise. In the evening she brought up near the ruined fort, known to the Arabs as El Kab, and on the following morning proceeded on her journey, still in good water, and with every prospect of retaining it during the whole of that day. At nine o'clock in the morning, however, a crash was heard, the steamer stopped short, and in five minutes had filled and

* This man commanded the force opposed to the River Column in February, 1885, and was killed at the action at Ginnis in December, 1885.

† He commanded the Berber contingent at Abu Klea, and was in chief command at Ginnis, after which defeat he was disgraced.

settled down, leaving only her bows and fore deck above water. The sketch facing page 100 shows the site of the wreck.

The accident was a serious one, and a moment's inspection must have shown that the "Abbas" was hopelessly disabled. There was, however, plenty of room for the crew on the fore-castle deck, the small boat was uninjured, arms and ammunition were at hand, the shore was not 50 yards distant, they were not a day's journey from the confines of Dongola, and it was believed that the last follower of Mohammed Ahmed had been left behind at Berber.

It is probable, therefore, that no great anxiety was felt by Colonel Stewart, and that after shifting his stores, his only thought was to hire camels with which to proceed on his journey. For this purpose he first entered into communication with the inhabitants of a small island immediately below the scene of the wreck, and having obtained their permission, landed his stores and crew there, having first spiked his gun and thrown it overboard. He also made a small present of money to each of the inhabitants, and despatched one of their number to fetch the Sheikh, or rather Omdah, of the neighbouring village of Hebbeh. This turned out to be an old blind man named Fakri Wad Otman (Osman), a near relation of Suliman Wad Gamr, the Sheikh of the Monasir tribe. The interview with this person was most cordial, and he promised at once to send for his relation the Sheikh, who was then at Salamat, nine miles distant, and obtain camels for the conveyance of the party. This promise he so far kept, that he at once sent off a messenger to Suliman, but instead of telling him to bring camels to the assistance of the shipwrecked party, he urged him to bring all the armed men he could raise, to destroy the "Turks," whom Providence had placed in his power.

This message was sent off at about ten in the morning, and at half-past three in the afternoon Suliman arrived, and at once proceeded to the bank opposite the island, waving a white flag. Hassan Effendi, who acted as Colonel Stewart's interpreter, was sent on shore with four companions to meet him, and invited him to come over to the island; this, however, Suliman refused, and the party proceeded to the house of Fakri Wad Otman, where a meal was prepared for the travellers. What occurred during the first visit to Fakri's house, is not accurately known. One account says that


Hassan Effendi's four companions were murdered,* and that his life was only spared on the condition that he would induce Colonel Stewart and the consuls to land unarmed and unescorted. Be this as it may, on returning to the bank he invited Colonel Stewart to land, and dissuaded him from taking an escort, on the plea that it would frighten the people, and render them unwilling to supply camels, and said that his four companions were still in Fakri's house.

Colonel Stewart, Mr. Power, M. Herbin, and Hassan Effendi then went to Fakri Wad Otman's house, where coffee was passed round, and the question of camel hire discussed. Suddenly Suliman jumped up, and crying "treachery" ran to the door holding up his hand. Colonel Stewart thinking that his host had taken alarm at the sight of a small pistol which he wore in his belt, handed the weapon to him, but no sooner had he done so, than a crowd of armed Arabs, who had lain concealed in adjacent houses and behind rocks, rushed upon the party. The Europeans fought like men, and with no other weapons than their fists, knocked down several of their opponents; they were, however, overpowered and murdered.

Hassan Effendi was wounded in the *melée*, but avoided serious injury by shielding himself with the blind man's body.

The same signal which had brought the murderers to Fakri Wad Otman's house, sent another party towards the river to attack the remainder of the crew. As the crowd was seen approaching the men jumped into the water, and amidst a hail of bullets, tried to reach the other bank. Thirteen of them, including two of the Reis, succeeded in doing so, the rest were shot or drowned.

It has never been definitely decided whether the "Abbas" was wrecked purposely or not, but from the position of the wreck, and the configuration of the river at Hebbeh, there is strong reason to suspect that she was.

The river at this point takes the form of a rather elongated  the two thick parts of the figure representing two islands, about three-quarters of a mile apart, and the black lines, the channels. The navigable channel follows the right bank past the upper of the islands,

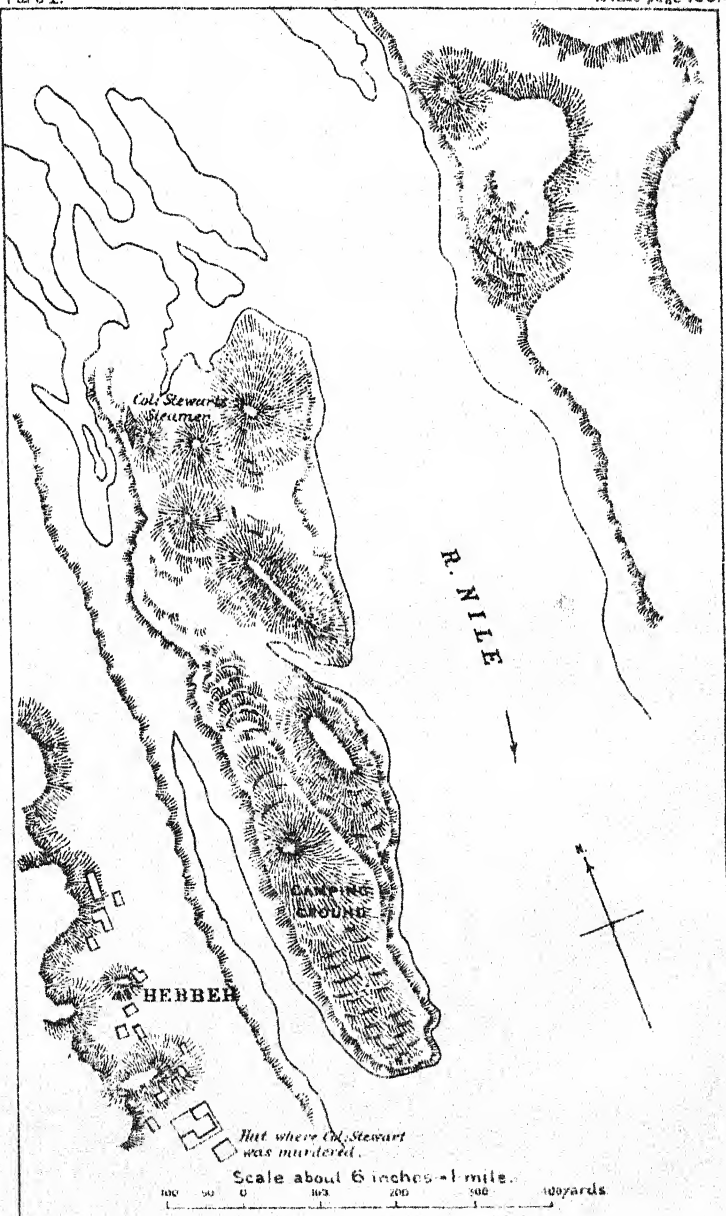
* This could hardly have happened without Colonel Stewart seeing traces of a scuffle, and all witnesses agree that he entered Fakri Wad Otman's hut without suspicion of treachery.

SKETCH TO SHOW POSITION OF COL. STEWART'S STEAMER AND THE HUT WHERE HE WAS MURDERED

(This sketch was made on the arrival of the
River Column at Hebbah in Febr'y 1884.)

Part I.

To face page 100.



and the left past the lower, which, at low Nile, is connected with the right bank.

Even a pilot who did not know the river well, and who had never seen it at low Nile, could hardly mistake the proper channel. In the first place the mere shape of the river would indicate that the deep water was to be found near the left bank, while the narrowness of the channel between the lower of the two islands, and the right bank, would make any one who did not know the water well fear to risk it.

Any man who had ever seen the river at its lowest at this point, and attempted the western passage, could only do so with one intention, that of running his vessel aground.

It must be borne in mind that during the voyage down from Khartum, the "Abbas" had brought up every night, and that therefore frequent opportunities may have occurred for the crew to have been tampered with from the shore.

The foregoing details were only arrived at gradually, and while enquiries were being made as to the fate of Lieutenant-Colonel Stewart, and action taken for the release of possible prisoners, Sir H. Stewart's energies were being devoted to the question of supply, and the organisation of the mounted infantry.

Sir H.
Stewart's
work at
Dongola.

On Sir H. Stewart's arrival at Dongola, there were in commissariat charge at that station about 50 days European rations for 1,000 men, and with the exception of 101 cases of biscuits and preserved meat on the islands in the Dal Cataract, no others were expected for a considerable time.

September
29th.
Supplies at
Dongola.

There were, however, in the Mudir's store 357,000 lb. of barley, 591,000 lb. of dhura, and 54,000 lb. of wheat, all unground. The meat supply was practically unlimited; vegetables (onions and pumpkins), and green forage, were plentiful, and fuel was procurable, but not in large quantities. Cereals of all kinds were freely promised by the Mudir. Groceries, medical comforts, and candles were not procurable.

There was no fear, therefore, of the small force at Dongola running short of the necessities of life, and there was every reason to believe, that by feeding it locally, the supply of preserved meat and biscuit could be kept intact. But until Sir H. Stewart could actually see the further supplies coming in, or could get a positive assurance from the Mudir that they would do so in certain quantities by a certain date, he was unable to report to Lord Wolseley that the expedition

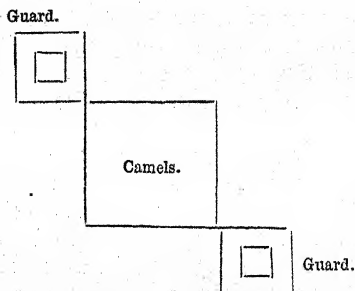
Difficulty of
obtaining
information.

could be supplied locally. And until such a report was received it was necessary to continue concentrating supplies to the front. Sir H. Stewart fully recognised the importance of this question, and never ceased to press the Mudir for some definite promise, which, however, he never succeeded in obtaining.

One of Sir H. Stewart's first cares on arriving at Dongola was to go thoroughly into the question of the camel drill and equipment of the mounted infantry.

Drill for
Camel Corps.

Owing to the comparatively slow pace of an average camel and the difficulties of mounting him and dismounting, it was obvious that the drill would have to be considerably modified from that in use with infantry mounted on horses; Sir H. Stewart decided, therefore, that as soon as touch was obtained of the enemy, the men should act purely as infantry, leaving their camels in a compact formation under a guard, in this form:—



The officer commanding the Mounted Infantry, was therefore ordered to devote his attention to training men and camels to assume this formation at the shortest possible notice. The steadiness of the camels under fire and in the face of a charge, was also tested at several parades, and found to be most satisfactory, the Royal Sussex representing the attacking force.

Sir H.
Stewart
anxious to
lighten load
and increase
number of
camels.

Instructions (given in full in Appendices 28 and 29) had been received by Sir H. Stewart on the equipment, object, and method of employment of Camel Corps. In a memorandum on the subject addressed to the Chief of the Staff, on the 23rd of October, Sir H. Stewart expressed an opinion that the weight proposed (400 lb.), was far too great for the Sudanese Hajin or riding camel, and stated that, after careful

enquiries, he had come to the conclusion that 200 pounds was the maximum weight they should carry including the rider. "To place the proposed weight on these camels," he said, "will simply convert them into indifferent baggage animals." To obviate this difficulty he proposed that spare camels should be bought, and that they should carry the suleetah, the water skins, the tent and tripod, and the three days' grain.

To this memorandum the Chief of the Staff replied, on October 31st, that Sir H. Stewart must look upon the Mounted Infantry camels as beasts of burden, and select the strongest and not the fastest, and said that he considered that a baggage camel ought to carry the proposed weight thirty miles a day.

The Chief of the Staff's reasons for not wishing an increase in the establishment of camels were:—

1st. That the country could only supply food for a large number for a short time. 2nd. That it was impossible at present to supply drivers or saddles for them, and without drivers they would be useless. 3rd. That the only chance of an efficient transport was to have hired camels, and it was also the best way to keep on good terms with the desert Arabs. He believed that the Arabs would only sell their worst camels, and that if they could get money for them they would be indisposed to hire. He accordingly directed Sir H. Stewart merely to buy enough camels to keep the several markets open and to induce the Arabs to attend them, and to use his best efforts to try and hire camels with saddles and drivers.

Certain articles* were, however, struck out of the equipment, reducing the weight to be carried by about 35 pounds, and, as will be seen in a later chapter, every animal, from the thoroughbred Hajin to the heavy baggager of the Delta, had to take his turn as a baggage camel.

On the 5th of October, the day on which Lord Wolseley and staff arrived at Wady Halfa, a telegram was received from the War Office stating that the last of the 800 boats had left England. The first batch of these boats, 31 in number, had arrived at Assuan, and twelve of them had been rowed, towed, and poled through the first cataract as an experiment, which had proved most successful.

On the 11th of October, Lord Wolseley gave orders for the following distribution of the troops in Egypt and the Sudan :—

Objection to increasing the establishment of camels.

October 5th.
Arrival of
Lord
Wolseley at
Wady Halfa.

Lord
Wolseley's
scheme of
distribution.

* Marked in the list, Appendix 28, with an *.

Garrison of Alexandria..

1 Garrison Battery R.A.
1st Battalion Yorkshire Regiment.
 $\frac{1}{2}$ Battalion King's Royal Rifle Corps.

Cairo.

Squadron 19th Hussars.
Battery of Royal Horse Artillery.
Battery of Field Artillery.
Battery of Mule ditto (mountain).
Company Royal Engineers.
1st Battalion Royal Scots.*
2nd Battalion East Surrey Regiment.
Cameron Highlanders.
Detachments.

Assuan.

Very young men of Essex Regiment.
Egyptian Army.

Ankash (Wady Halfa) to Hanneh.

Very young men of South Staffordshire Regiment.
Detachments of Royal Engineers.
Egyptian Army.

Dongola.

500 men, to be all young men of Royal Sussex and
South Staffordshire Regiments.

Debbeh.

1st Battalion South Staffordshire Regiment.

Abu Hamed.

200 very young men, from D.C.L.I., and other Regiments.

Berber.

2nd Battalion Duke of Cornwall's Light Infantry.

* This battalion was under orders for Egypt, but was not sent.

Fighting Force in neighbourhood of Shendi.

12 Mountain Guns	{ British Camel Battery Egyptian Camel Battery }	100
Royal Engineers .. .. .	.. .. .	50
19th Hussars .. .. .	.. .. .	360
Mounted Infantry .. .. .	.. .. .	400
Camel Corps .. .. .	.. .. .	1,050
Royal Marines .. .. .	.. .. .	100
1st Battalion Royal Irish Regiment .. .. .	.. .. .	550
1st Battalion Royal Sussex Regiment .. .. .	.. .. .	550
1st Battalion Black Watch .. .. .	.. .. .	550
1st Battalion Berkshire Regiment .. .. .	.. .. .	550
1st Battalion Royal West Kent Regiment .. .. .	.. .. .	550
1st Battalion Essex Regiment .. .. .	.. .. .	550
1st Battalion Gordon Highlanders .. .. .	.. .. .	550
		<hr/> 5,910 <hr/>

On the morning of the 25th October, the first whaler was hauled through the "Great Gate" of the second cataract by a small party of natives, under the superintendence of Colonel Butler, assisted by Koko the Reis of the cataract; the operation was performed with great ease, and in the afternoon of the same day another whaler was hauled through by the Royal Navy in the presence of Lord Wolseley.

October 25th.
1st whaler
through
"Great Gate."

Up to this time the Halfa-Sarras railway had been working in a most unsatisfactory manner, owing to the insufficiency and bad condition of the locomotives. One light train a day was the utmost that could be run on it, and even this frequently broke down. Often two days would elapse without a train being run at all.

Sudan
railway.

On the 6th October, the 8th (Railway) Company, Royal Engineers, under command of Major Scott, R.E., had arrived at Wady Halfa, and by its exertions, so far improved matters, that by the end of the month, three trains were generally run daily.

In spite of every effort on the part of the Railway Staff officers, it was found that stores arrived at Wady Halfa (which was appropriately compared to the neck of a bottle)

Accumulation
of stores at
Halfa.

far more rapidly than they could be forwarded on by train. Nor was there any hope of this state of affairs being remedied, until the arrival of the locomotives which had been ordered from the Cape of Good Hope,* on the Government deciding to despatch an expedition.

Difficulties of
the extension.

An extension of the railway had also been commenced in the direction of Ambako, but owing to the impossibility of obtaining sufficient native labour, this had to be temporarily abandoned, in order that the labourers and camels might be employed for other service.

Want of
labourers.

On the 17th October, Sir E. Baring was asked to apply to the Egyptian Government to facilitate obtaining 1,500 additional native labourers; and replied that Nubar Pasha would telegraph to the Mudir of Esneh to inquire what could be done, but as the population was sparse, and it was the time for sowing, he considered that it would be difficult unless very high wages were given.

On 26th October Lord Wolseley again applied to Sir E. Baring to use his utmost endeavours to obtain 1,000 labourers from Egypt, where the population was thick. He offered them 4 piastres (10*d.*) a day and their rations; 2 piastres a day, without food, being the ordinary daily wage.

On 30th October, Sir E. Baring replied that the Mudir of Keneh had offered to supply the men at 10 piastres (2*s.*) a day with their food, and added that Nubar Pasha recommended us to pay this high rate.

This proposal to give only very high wages was refused on the ground that the men then in our employ were quite satisfied with 4 piastres a day, and that we should not get any more for 10 piastres than for 4; while to give 10 piastres would upset our whole labour market. To this answer Sir E. Baring replied, on November 1st, that unless the sum he named were given, he must decline to further interfere in the matter, in which case the labourers would most certainly not be procured. As, however, time expired labourers were then willingly re-engaging at 4 piastres a head, the decision not to pay more, was adhered to, and the matter then dropped, with the result, as mentioned above, that the railway extension had to be temporarily abandoned.

On the 5th November, Sir E. Baring offered to supply 500

* The Sudan Railway, constructed by the Khedive Ismail, was on the same gauge as the Cape of Good Hope Railways, and it was only by sending to that colony, that rolling stock of the necessary gauge could be obtained.

to 1,000 convicts. As, however, the conveyance of these men from Egypt would have taken up transport, which was urgently required for other purposes, and as they would have required one man to every ten as a guard, the offer was declined.

A serious delay in the progress of the expedition was also nearly caused at this period, by the failure of the coal supply, due to a misunderstanding in the contract made in England with Messrs. Cook. It was believed by the Chief of the Staff that Messrs. Cook had contracted to continue delivering coal at and between Assuan and Wady Halfa, as long as we might require it, at a certain rate. On the 18th October, however, when the whole of the coal at Korosko had been used up, and only 800 tons (*i.e.*, about 7 days' supply), remained at Wady Halfa, he was informed by Messrs. Cook that they had only contracted to deliver a certain quantity, and that their contract had been fulfilled, and consequently no further supplies of coal were on the way up. They also intimated that should they be required to continue the delivery of coal at and south of Assuan, they could only do so under a contract more favourable to themselves than that which they had closed.

Temporary
failure of
coal supply.

Enquiries were at once made as to the prospects of supply and it was found that there were 2,400 tons at Alexandria, and 1,600 tons coming in weekly, that 3,800 tons had been delivered in Cairo since October 2nd, and since the same date 700 tons had been delivered weekly at Assiut. South of Assiut no delivery had been made. In the meanwhile the failure of coal had begun to make itself felt. On the 28th October all the steamers between Assuan and Halfa ceased to run.

Under these circumstances, the Chief of the Staff was forced to sign Messrs. Cook's second contract. In order to meet the difficulties of the moment he arranged, through the instrumentality of Sir E. Baring, for the loan of coal from the Daira sugar factory at Arment, the coal borrowed to be replaced by Messrs. Cook. Unfortunately this coal proved to be so inferior as to be almost useless.

By November 3rd the stores at Kenah and Esneh were filled up, and by November 10th the difficulty was finally overcome.

In the meantime Lord Wolseley had, on the 19th of October, determined to concentrate at Debbah, in advance of the infantry, a mounted force capable of moving direct

October 19th.
Lord
Wolseley

determines to concentrate force at Debbeh in view of advance across desert.

across the desert to Khartum, in the event of intelligence from General Gordon rendering an advance upon Khartum necessary at all hazards.

It was the possibility of finding himself compelled to undertake this most difficult and somewhat hazardous operation, that had caused him, when at Cairo, to arrange for the organization of the three Camel Corps that had been sent out from home. He felt that at any time after reaching Debbeh, he might receive an urgent appeal from General Gordon for immediate help. Such an appeal could only be met by an expedition on camels across the desert, from the neighbourhood of Debbeh to that of Metemmeh.

Composition of force for desert march.

The proposed composition of the force was as follows:—

19th Hussars, mounted on Egyptian cavalry horses	360
Heavy Camel Division	400
Light Camel Division	400
Guards Camel Division, including 100 Marines attached.	400
Egyptian Camel Corps	60
Camel Battery R.A., 1st Battery	
1st Brigade, Southern Division	100 and 6 guns
Egyptian Battery	80 and 6 guns
Commissariat and Transport Corps, 9th and 11th Companies, with 2,000 camels ..	150
Camel Bearer Company for 200 sick	200
Camel Field Hospital, 100 beds	100

2,250 and 12 guns

Artillery, 19th Hussars, and Marines ordered to front.

The Commandant of the base was thereupon ordered to send the Camel Battery,* the 19th Hussars, and the Marines by first opportunity, and to send with them 40 days' groceries per man for the commissariat, in addition to their own groceries (20 days). These extra 40 days were ordered to ensure a sufficient supply for the troops for their march southwards from Wady Halfa, whence all existing groceries were being pushed to the front.

Concentration of supplies at Debbeh.

Sir E. Wood was also to collect at Debbeh supplies for

* Information with regard to the organization of this battery is given in Appendix 30.

3,000 men, 4,500 camels, and 500 horses for one month; for 4,000 men for 15 days; and for 600 men for 90 days.

The Senior Commissariat Officer was warned to be liberal in his estimate for the above, as the people coming from Khartum would have to be provided for.

On the 26th of October a general order was issued forming the Camel Corps into four regiments, to be called respectively:—

- The Heavy Camel Regiment.
- The Light Camel Regiment.
- The Guards' Camel Regiment.
- The Mounted Infantry Camel Regiment.

The Camel
Regiments.

On the 28th October, the Heavy Camel Regiment, which was in advance, reached Assuan, where the necessary arrangements had been made for handing over the camels and camel equipment to the regiments.

On this day Lord Wolseley and his personal staff left Wady Halfa for Sarras *en route* for Dongola, leaving the Chief of the Staff, temporarily at Wady Halfa, to push forward the troops and supplies with all possible speed.

October 24th.
Lord
Wolseley
leaves for
Dongola.

The telegraph between Dongola and Wady Halfa being in working order, Lord Wolseley was in a position to direct from the former place all the general plans of the expedition, while leaving it to his Chief of the Staff, in whose ability he had complete confidence, to carry out all the necessary daily detail. During the progress of these operations, Lord Wolseley, upon more than one occasion, carried on lengthened conversations over the telegraph wires with Sir E. Baring and also with Sir R. Buller. The line was always "cleared" for this purpose, and no one was allowed to be in or near the two offices, between which the conversation was being carried on, while it was in progress. A vast amount of business was thus got through in a very short time, which otherwise must have necessitated numerous cypher telegrams, extending possibly over some days.

Lord Wolseley felt that his presence was thus necessary at Dongola. From there he was able more easily than from further north, to communicate with General Gordon by means of the Mudir, of the native inhabitants of the place, and of the many desert Arabs who frequented the neighbourhood at that season of the year. He also felt that the Mudir, Mustapha Yawir, was a very important factor to be dealt with, and it was by no means clear what was the cause of

that official's tortuous policy. He had been very insolent both to Sir H. Stewart and to Sir C. Wilson. Lord Wolseley was confident that if this fanatical Mussulman could be made to feel that his interests were identical with those of the Expeditionary Force, and could be induced to throw in his lot with it, he would be of the greatest use. If he would not loyally do this, the time had come when he must be dismissed and sent back to Cairo. Moreover, the family of the Mahdi lived in the neighbourhood of Dongola, and through them it was hoped that communications might be opened with Khartum.

Position of
the troops at
this time.

The force was at this time distributed as follows :—

At Dongola were the Royal Sussex and a wing of the Mounted Infantry which was being formed into a Camel Regiment. The whole was under the command of Sir H. Stewart.

On the river between Dongola and Wady Halfa were pioneer detachments of Royal Engineers in whalers.

At Wady Halfa were the South Staffordshire and two companies of the Essex Regiment, waiting to embark in whalers; also the whole of the voyageurs. Two more companies of the Essex Regiment were sailing up from Assuan, where the remainder of the regiment, with the Black Watch and Duke of Cornwall's Light Infantry, were still in camp. The Gordon Highlanders and the Royal Irish, Berkshire, and Royal West Kent Regiments, were still at Cairo.

The remainder of the Mounted Infantry, the 19th Hussars, Artillery, and Transport Companies were écheloned in small detachments along the right bank of the Nile from Dongola to Assuan. The Camel Corps from England was only beginning to arrive at Assuan.

Colonel Furse, Director of Transport, was communicated with and submitted the following memorandum :—

Director of
Transport's
scheme for
movement of
mounted
troops.

"In submitting a scheme for the concentration at Debbeh in seven weeks time of the force, as enumerated in your telegram of the 28th October, it will be necessary to commence by showing the steps which it is intended to take in starting from Assuan the various parties which will have to move to Wady Halfa by road.

"These various bodies are as follows :—

Guards' Division Camel Corps, four sections.

Heavy Division Camel Corps, ten sections.

Light Division Camel Corps, nine sections.

Bearer Column.

Battery of Artillery, Egyptian Army.

Major Marriott's Camel Corps.

Two divisions, 9th Company Commissariat and Transport Corps.

Headquarters and two divisions, 11th Company Commissariat and Transport Corps.

" All these will proceed to Halfa, marching by the western bank of the Nile, the movement commencing to-morrow with a section of the 11th Company Commissariat and Transport Corps, if it can be ferried across the river* in time to-day.

" Depôts of forage have been established on this route, one on the western bank opposite Assuan, one at Kurteh, one at Tomas, and one at Angain. At each of these places are to be stored three days' forage for 2,500 camels (800 light animals on a ration of 10 lb. tibbin and 10 lb. of beans or dhurra, 1,700 large animals on a ration of 15 lbs. of tibbin and 10 lb. of corn or dhura). Rations for the men and drivers for the entire march will be carried, one camel being allowed for the rations for eight men for thirteen days. The officers in charge of convoys will also have an imprest, so as to purchase what they can on the road, and touch as little of the forage as possible; however, reports received, show that there is little probability of finding much on this line. The road on the eastern bank presents serious obstacles in two places for camels, and has only been used of late for horses and mules.

" On the western bank will have to march—

450 animals Heavy Division Camel Corps.

405 " Light " " "

180 " Guards' " " "

247 " Bearer Company.

120 " Battery Artillery, Egyptian Army.

120 " Marriott's Camel Corps.

1,332 " Commissariat and Transport Corps.

2,854

" Starting about 250 animals every other day the movement which will commence to-morrow will be completed in 11 days, the whole of the above force would, therefore, be clear of Assuan by the 19th November, and be at Halfa (12 marches off) on the 30th November.

" With a view to completing the concentration by the 15th of December at Debbah this movement might be

* No wind to-day, and only one boat available; this boat stuck on a mud bank with the heavy baggage of the Guards.

expedited by marching off a convoy every day. Brigadier-General Grenfell, however, considers that a day should intervene between the starting of two consecutive parties, as, viewing the small means there are for ferrying the men, camels, equipments, rations, &c., to the western bank, it would be difficult to send over a sufficient number each day.*

"From Halfa to Debbeh.

"It is assumed that the entire force, which will have to march from Halfa to Debbeh by route march, will consist of

19th Hussars	360
1/1 Southern Division R.A. ..	115
Heavy Division Camel Corps ..	450
Light " " "	405
Guards' " " "	315
Royal Marines	100
Royal Engineers	?
Bearer Company	247
Moveable Field Hospital ..	?
Hospital for Dongola	103
Battery artillery, Egyptian Army	120
Marriott's Camel Corps	120

"In the absence of any knowledge as to what depôts have been formed on this road, it is difficult to form an idea of what means have been accumulated at various points to provide the marching force with supplies, forage, water, and fuel; to meet, however, a certain amount of these requisites, there will be two companies of the Commissariat and Transport Corps, with 2,000 baggage camels, representing, if all present and fit for duty, a carrying capacity of 600,000 lb. The carrying capacity of each camel has been calculated at 300 lbs., but some of the Beni Suef and Assiut camels are fine animals up to a greater weight of load. Those from Assiut will only arrive at Assuan in time to have a short rest before resuming their march southwards.

"The distance from Wady Halfa to Debbeh is 337 miles, which, divided into marches of 20 miles a day, would be performed in 17 days. As the mounted corps will arrive from Assuan one after another, it is presumed that they will be sent on in the same order to Dongola and Debbeh. So that they may therefore have the assistance of the baggage animals necessary to carry their supplies, forage, &c., detach-

* Any day lost will have to be made up by starting two detachments on consecutive days.

ments of the Transport Companies will be started from Assuan in such a sequence as to enable the two to arrive at Wady Halfa about the same time.

"On the departure of the troops from Assuan and Halfa a number of sick animals unfit to march will have to be left behind for treatment. A sick animal depôt will, therefore, have to be established at each place, the animals on recovery being either employed for local transport purposes or moved south to Dongola and Debbah, where a remount establishment will have to be formed. Animals for this purpose will be needed at short notice, therefore remount establishments at Assuan or Halfa would be of little use. These should be formed at Dongola and Debbah, where the source of supply has not been drawn upon so much as it has, north of these places.

"A large number of animals require the care of a good staff of Veterinary Surgeons, not only for the cure of the animals but for the early prevention of deep-seated injury. The Principal Veterinary Surgeon proposed on the 25th of October to divide his officers as follows:—One Veterinary Surgeon for each Cannel Corps, 3; one Veterinary Surgeon for each Commissariat and Transport Company, 2; one Veterinary Surgeon with the 19th Hussars; and himself at the Headquarters of the Line of Communications, for general supervision and direction. Considering the large number of animals to be employed, the Principal Veterinary Surgeon did not consider he had sufficient officers with the ones enumerated. Brigadier-General Grenfell and myself quite concurred with him in this, and at his suggestion the General on the 23rd of October, in telegraphing to the General of Communications the arrangements for veterinary supervision proposed, asked for two more Veterinary Surgeons to be asked for from home, for employment in sick animal depôts, remount depôts, &c. At present there are not sufficient veterinary officers for these purposes. The necessity for a sufficient number of Veterinary Surgeons has made itself felt in every one of our wars and expeditions. The Veterinary Surgeon with the 11th Company at Assuan has daily to dress some 60 animals which have arrived here suffering from sores and galls. . . .

"Four Veterinary Surgeons for 4,400 animals (horses not included) are quite insufficient if we wish to keep the animals in good condition and get the utmost out of them.

"The Principal Veterinary Surgeon has had his medicines made up in small boxes, so as to furnish each section of the
(s.c.1)

Camel Corps with one containing dressings for sore backs and galls.

"With regard to proper supervision of transport expenditure, by which, I understand, guarding against wastage of transport means, the constitution of the commissariat companies is a guarantee for this; five officers and six conductors should secure ample supervision for 1,000 animals.

"As the Director of Transport or his Assistant, or probably both, will be with the companies, the officers commanding companies or detached divisions or sections will be directed to report to them daily the amount of transport, which from consumption of food, forage &c., becomes available. This will be reported to the senior officer present by detached parties, who will issue his instructions for utilising it to the best advantage. Orders will be issued that every assistance be given by the transport to the supply department, and that every endeavour be made to obtain a load for a camel ordered to move southwards at any point on the road, inquiring, when transport is available, at every station and post if any assistance is needed, and complying with the demand as far as circumstances will admit.

"I have already telegraphed to the General of Communications the necessity which exists for a Paymaster or Accountant to audit all accounts connected with the Transport Corps, before final transmission either to the War Office or to the Chief Paymaster. In a paper on "Land Transport Arrangements," which I prepared at Cairo, and which was seen by General Lord Wolseley and yourself,* I asked for a Paymaster for the corps, on the ground that officers constantly on the move charged with the supervision of a large number of drivers, animals, equipments, &c., cannot devote sufficient time to prepare and submit accounts in the best of form, and it would save endless queries and references hereafter having an officer detailed to look after the financial transactions of the corps. I abstained from urging this in Cairo as the officers of the Pay Department in Egypt were at that time too few to give me any hope of getting what I demanded.

"The quality of the materials of which the saddlery supplied for use up the Nile is made, made me very anxious to demand from the Ordnance Store in Cairo a supply of articles for repairs, and a staff of native workmen to execute the repairs. An unfortunate telegram sent from Assuan in ignorance of

* The Chief of the Staff.

what the men were required for, has divided the men from their tools and materials, and, unknown to me, 16 of these men were allowed to proceed to Halfa without them. The remaining 10 are here waiting for the arrival of their cases, tools, materials, &c., and will be sent on with them.

"The repairing establishment will have plenty of repairs to execute, and should be as far forward as possible, for it will be impracticable to send articles to the rear to be repaired. I would suggest its being sent to Dongola in the first instance, there to repair every article which has been damaged on the march up from Halfa, and afterwards pushed up to Debbeh.

"The Ordnance Store Department has been demanded for spare girths and stirrup leathers, of which a number are likely to give way; and for such small repairs as the men can execute themselves, it has been suggested that a small bag containing thread, needles, wax, string, knife, scissors, awl, be issued to each section of Camel Corps.

"A board has been assembled here to look at the pack saddles now in use, and has made certain suggestions, such as substituting tanned rope for hide lashings, which in this dry climate are valueless, shortening the saddle for smaller animals, rounding the wood of the keys which hold the trees together, &c. These alterations are being gradually carried out.

"(Signed)

G. A. FURSE,

"Lieutenant-Colonel,

"Director of Transport.

"Assuan, 29th October, 1884."

While these arrangements were being made to push the mounted troops southward, every effort was being made to arrange the commissariat for the troops at Dongola. At this point, or on the way to it from Wady Halfa, were about two months' supplies for 7,000 men, for the subsistence of the troops until their whaler rations could be opened at the fighting base. Between England and Wady Halfa a continuous stream of whaler and ordinary rations and of ordnance and commissariat stores was flowing southwards. The table given in Appendix 31 shows the position of whaler stores. This table also shows one of the great difficulties which the hurried nature of the preparations in England entailed on the expedition. It will be observed that instead of being made up in boat loads, the stores were packed in batches of articles, consequently a number of boats were often kept waiting for one article, which was necessary to complete their equipment.

(s.c.1)

State of
supplies at
the end of
October.

CHAPTER V.

EVENTS FROM LORD WOLSELEY'S ARRIVAL AT DONGOLA TO THE DEPARTURE OF THE DESERT COLUMN.

November
3rd.
Lord
Wolseley's
arrival at
Dongola.

Map 1.

Colonel
Alleyne's
trial trip to
Dal.

ON the 3rd of November Lord Wolseley and his personal staff arrived at Dongola. The Mudir had informed Sir H. Stewart that he did not intend to come out to meet him, but after an interview with Zohrab Bey, Lord Wolseley's native Aide-de-Camp, he did so. A very friendly interview then ensued, and on the following day Lord Wolseley invested the Mudir with the insignia of a Knight Commander of the Order of St. Michael and St. George.

While Lord Wolseley was travelling up from Wady Halfa, Lieutenant-Colonel Alleyne made a trial trip up to Dal with six whalers, fully laden with supplies, and manned by thirty-six voyageurs; he was accompanied by four officers, to post at points where portages would be necessary. The party left Sarraas at 8.30 a.m. on the 30th October, and arrived at Dal on the afternoon of November 3rd. The boats carried two and a-half tons, including men, and Colonel Alleyne reported that this load could be increased, but that doing so would necessitate portaging at various points over which his boats had been able to float. The boats were sailed or rowed in clear water and tracked through the cataracts, at only one of which (Semneh) they had to be partially unloaded. They received no injury in the cataracts and did not take in any water; but owing to the dryness of their planks, Colonel Alleyne recommended that they should all have a coat of paint. Shortly after passing Semneh, one of the voyageurs (Louis Capitaine) unfortunately fell overboard, while using his paddle in the bow of one of the boats, and in spite of all efforts to save him was drowned in the rapid water.

November 1st.
Start of
whalers from
Gemai.

On the 29th of October the orders, given in Appendix 32 had been issued by the Chief of the Staff for troops moving by boat, and at 8.30 A.M. on the morning of November 1st, two months and three weeks after they were ordered in England, the first whaler boats propelled by English crews left Gemai. The detachment consisted of 3 officers and 47 non-commissioned officers and men of the 26th Company R.E.; they

occupied five boats, with a voyageur in each. The flotilla sailed from Gemai to Sarras in four hours, and thence, after loading up with 100 rations per man to take to Korti, and "way rations" for their subsistence until they reached the next post on the Line of Communications, they entered the rapids of the Batan el Hajar or "womb of rocks."

This district, about 62 miles in length, is, as its name implies, a mass of rock, black jagged basalt, unenlivened by a palm tree or blade of grass, save where here and there a high Nile eddy has deposited a layer of mud in some rocky hollow; its black monotony only broken by an occasional gleam of yellow in the west, where the ever-drifting sands of the Libyan Desert have forced their way through some rocky gorge. Through this district, the Nile, probably owing to the rupture in long past ages of some rocky barriers, has forced its way, rushing and swirling, now to the right and now to the left, round and over innumerable pinnacles of rock, which, during every day of its annual rise and fall of over 30 feet, change the character of its torrent and the passages through which it can best be stemmed; the little resting-place behind a rocky islet of to-day, becoming, as the river rises, the nucleus of a cascade on the morrow, and on the after-morrow a treacherous tooth of rock buried beneath a smooth swift current: while as the river falls the process is reversed and islands rise one by one out of the foaming waters, their places beneath the surface being taken in succession, according to their stature, by the countless army of their fellows.

The Batan el Hajar.

To write a detailed account of the prolonged struggle between man and nature which the ascent of these cataracts, by the six hundred English boats, involved; how company after company and battalion after battalion, unloaded and loaded, rowed and tracked, day by day and hour by hour, under a blazing sun, against that ever rushing, ever changing torrent, between unchanging walls of burning basalt; to tell all this in detail would be to tell an unequalled tale of pluck, determination, and endurance, but one which would be of little practical use in a military history. For the purpose of the present work it will suffice to give an outline of the principal obstacles to be overcome, the means by which they were surmounted, and the time expended in transit.

Difficulties encountered by boats in the rapids.

After leaving Sarras the first serious obstacle to navigation is the cataract of Semneh, the foot of which is reached after an eleven miles pull against a smooth, swift current running

Semneh Cataract.

between high rocky banks. Then come ten miles of broken, swifter flowing water, against which, however, with the help of a moderate breeze, it is possible to proceed without having recourse to the track lines. At the head of this rapid is the great "Gate of Semneh," a narrow gorge, between two rocky cliffs, partly blocked by two islands about equi-distant from the shores and from each other. Through the three passages thus formed, the whole pent up volume of the Nile rushes as through a sluice gate. Here the boats have to be unloaded, and their cargoes, package by package, carried for half a mile over the rocks and deposited, near smooth water, above the cataract. Then the track lines are passed round the rocks and two or three boats' crews manning one line, each boat is in turn hauled by main force up the water slide and run in opposite its cargo on the beach.

Ambako
cataract.

For the next sixteen miles the course of the river is unimpeded by any serious obstacle, still for every yard the current runs strong as the Thames in flood, on every side the basalt mountains radiate their heat, and everywhere the sunken rocks lie in wait for the unwary steersman. At the end of this distance the cataract of Ambako is reached, a very different piece of water to that of Semneh. At the latter spot an obstacle to navigation was formed by the volume of the Nile being pent into a narrow gorge; at Ambako the same effect is produced by a broad expanse of river being choked by an innumerable mass of reefs and islets. At full high Nile, when the lower rocks are buried deep beneath the surface, the cataract is not a formidable one; but as the river falls and reef after reef makes its appearance, the difficulties of navigation increase, until at low Nile the cataract has become impassable for the larger native craft and is a grave source of difficulty even to the buoyant English whalers.

Mode of
passage of
this rapid.

Here every means of propulsion has to be employed. At one moment the whalers, under the lee of some islet, may be paddled gently up a narrow lane of almost stagnant water. Then, as the shelter of the rock is lost, though its crew pull for dear life, it is carried back some hundreds of yards until a point of vantage is gained near the shore. Next the track line is got out and step by step the boat is hauled round a projecting point by a treble boats' crew. Now a fresh breeze and a clear reach of moderate water make it just possible to gain a few hundred yards, by making the very most of sails and oars; then a bit of shelving shore is met with, along which good progress may be made by half the crew tracking, while

the remainder stay on board and use their punt poles. At length, by dint of perseverance, the five miles of rapid are surmounted in twice as many hours of incessant labour, and another eight miles of open water are entered on, to be ascended under the same conditions as before.

At the head of this eight miles is the cataract of Tanjur, which in its nature is a combination of the last two rapids, being formed by the projection of several islands in rather a narrow part of the river. At the best of times it is a formidable obstacle to navigation, but as its difficulties are due more to the great strength of its torrent than to reefs and hidden dangers, they decrease as the volume of the river lessens. Although only two and a-half miles in length its ascent is a good days' work.

Tanjur
cataract.

Another fifteen miles of open water, broken only by the insignificant cataract of Okmeh, ends in the cataract of Akasheh, formed by an almost continuous reef of rocks running across a bend of the river. At high Nile this is hardly perceptible, but at low Nile the effect produced is somewhat similar to that at Semneh, and similar means are employed to surmount it.

Okmeh and
Akasheh
cataracts.

Ten miles above Akasheh, at the head of a broad smooth reach of swiftly running water, comes the cataract of Dal, in its nature somewhat similar to that at Ambako, though it is rather easier at high, and more difficult at low Nile than the latter rapid. It is $5\frac{1}{2}$ miles long, and by middle Nile, stores had to be portaged round $3\frac{1}{2}$ miles of it. The ascent of the Dal cataract puts the traveller clear of the Batan el Hajar, the passage through which has occupied about 18 days; and the next hundred miles of his course lies over smooth but swift water running between the sandy desert on the west and a low range of rocky hills, at some distance from the river, on the east. Between the river and the hills to the east, is interposed a strip of cultivation of varying width, studded with palm trees yielding a fair supply of dates.*

Dal cataract.

At the end of this 100 miles is the cataract of Kajbar, caused by a rocky causeway stretching across the river; a rapid somewhat similar in character to that of Akasheh, and like it barely noticeable at high Nile. At this point the river makes a sharp bend to the eastward, and for the first time the prevailing north-east breeze becomes foul.

Kajbar.
cataract.

* That part of the province of Dongola which lies between the Batan el Hajar and the cataract of Kajbar, is divided into the two districts of Sukkot and Mahass.

3rd or
Hannek
Cataract.

Thirty-one miles above Kajbar is the cataract of Hannek, an obstruction caused, like the Great Cataract, and that at Ambako, by a cluster of islands in a broad reach of river. At high Nile it is an obstacle of little moment, but by the middle of November, its channels had become so shallow as to necessitate a portage for boat cargoes of over three miles.

Monasir
Cataracts.

After Hannek come 229 miles of uninterrupted clear water, up the latter half of which, however, the wind is foul. At the end of this reach begin the formidable cataracts of the Monasir, a series of rapids of even greater force and intricacy than those of the Batan el Hajar. The difficulties of these were greatly increased by the fact that the prevailing wind in them is foul, and that at the time of the troops entering them, knowledge of their topography was almost entirely derived from inaccurate native descriptions.

November
5th.
First infantry
regiment
embarks at
Gemai.

On the 5th of November the first British regiment (the South Staffordshire) embarked at Gemai, in whalers, for the front. The diary of the leading half battalion of this regiment, from the date of its embarkation to the date of its arrival above the 3rd Cataract, is given in Appendix 33.*

Part of the Duke of Cornwall's Light Infantry had reached Wady Halfa on this date, and also part of the Guards' Camel Regiment, which had arrived with equipment by steamer; the remainder of the Guards' Camel Regiment was marching from Assuan bringing the camels.

Korti I
made the
advanced
depôt.

From information which he gathered at Dongola, Lord Wolseley determined to make Korti the advanced depôt, instead of Debbeh, and settled to send the Mounted Infantry there as soon as another infantry regiment arrived at Dongola. He believed that the Mounted Infantry could be locally supplied with all rations except groceries, which could be forwarded to them by steamer.

Colonel
Colvile sent
to Merowi.

On the 8th of November Lieutenant-Colonel Colvile left for Merowi, the advanced post occupied by the Mudir's troops, to join the Wakil of the Mudirieh, who had established a post there with 100 of the Mudir's blacks. He was instructed, beyond his ordinary duties as an Officer of the Intelligence Department, to enter into negotiations with the frontier tribes, with the exception of the Monasir, and to endeavour to get possession of Colonel Stewart's diaries, and of any survivors that there might be from the wreck of the "Abbas." He was accompanied by an English telegraph

* The dates of embarkation at Gemai, and arrival at Korti, of the troops in whalers, are given in Appendix 34.

clerk. On November the 13th he arrived at Merowi, and telegraphed that the line was open for English messages.

On November 13th Lord Wolseley left Dongola by camel for Wady Halfa, which he reached late in the evening of the 16th of November. He was anxious to see and personally examine how matters and arrangements were progressing there.

On the 17th the following letter from General Gordon was received by Lord Wolseley :—

November
13th.
Return of
Lord
Wolseley to
Halfa.

" Khartum, 4th November, 1884.

" To the English.

" Post came in yesterday from Debbah, Kitchener, dated 14th October. Cipher letter, Wolseley, 20th September, 1884, which I cannot decipher, for Stewart took the cipher books, Foreign Office, with him. No other communications have been received here since 31st August, letter of Kitchener, which arrived 17th September, a week after Stewart's steamer left this. On the other side are names of Europeans who went with Stewart in steamer. At Metemneh, waiting your orders, are five steamers with nine guns. We can hold out 40 days with ease, after that it will be difficult. Guides say you gave them no money. I gave them 4*l.* each. I give them order on you for 5*l.* each, if you did not give them money you ought to give them 15*l.* not 5*l.* Terrible about loss of steamer! Warn Foreign Office when you are sure about loss of steamer, about loss of cipher books, which I sent down, as it was doubtful if we should ever be relieved; whence, and because it was looked on as perfectly safe, I sent Stewart, Power, and Herbin down, telling them to give you all information. With Stewart was the journal of events, from 1st March, 1884, to 10th September, 1884. The steamer carried a gun, and had a good force on board her. It is very, very sad.

Letter from
General
Gordon of 4th
November.
Can hold out
40 days more.

" Mahdi is here, about eight miles away. All north side along White Nile is free of Arabs; they are on south, and south-west, and east of town, some way off. They are quiet. Sennar is all right, and knows of your coming. With steamers are my journals from 10th September, 1884, to date, with all details and map of Berber. We have occasional fights with Arabs. Mahdi says he will not fight during this month (Moharrem). With him are all the Europeans, nuns, and *on dit*, all have become Mussulmans. Slatin is there; Lupton (Mahdi says) has surrendered.

" Since the 10th March, 1884, we have had, up to date, exclusive of Kitchener's, 14th October, 1884, only two des-

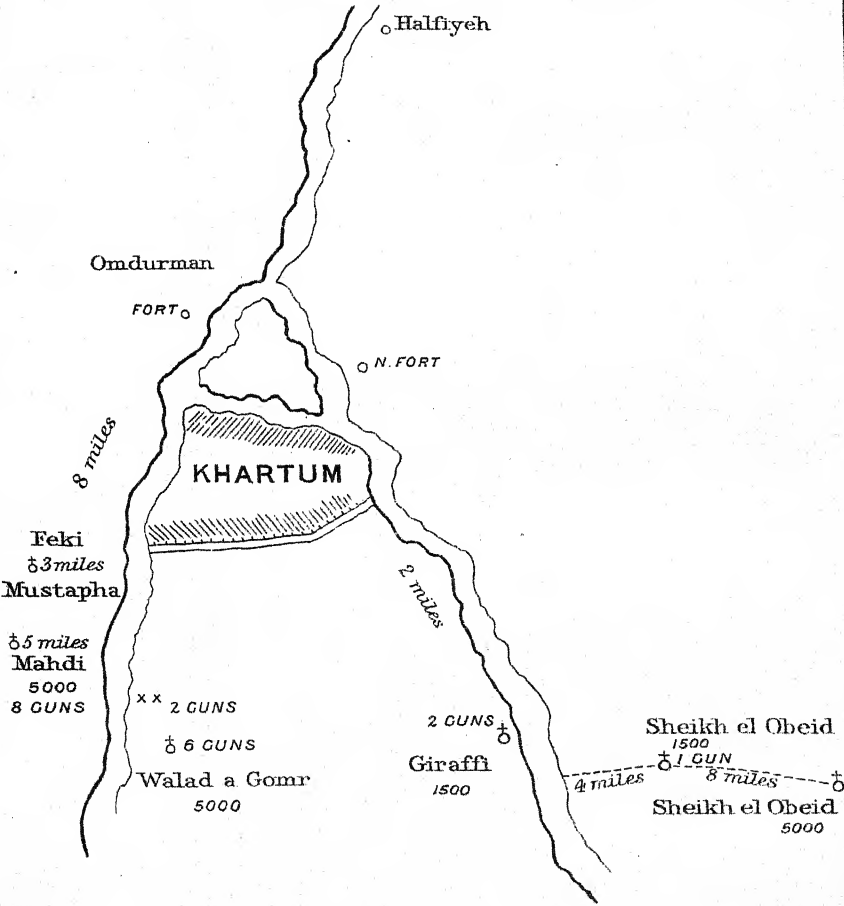
patches, one Dongola with no date, one from Suakin, 5th May, one of same import, Massawa, 27th April. I have sent out a crowd of messengers in all directions during these eight months. Got newspapers to say I received through Kitchener letters from Sir Samuel Baker, my sister, Stanley from Congo. Do not send any more letters private; it is too great a risk. Do not write in cipher for I have none, and it is of no import, for Mahdi knows everything, and you need not fear him. I should take the road from Ambukköl to Metemmeh, where my steamers wait you. Lionidis (Greek Consul), Hansell (Austrian Consul), all right. Stewart, Power (British Consul) and *Times* correspondent, Herbin (French Consul) went down in "Abbas." If journal is lost with Stewart we have no record of events from 1st March, 1884, to 10th September, 1884, except a journal kept by doctor. Stewart's journal was a gem, illustrated, with all the Arabic letters of Mahdi to me, &c., &c.

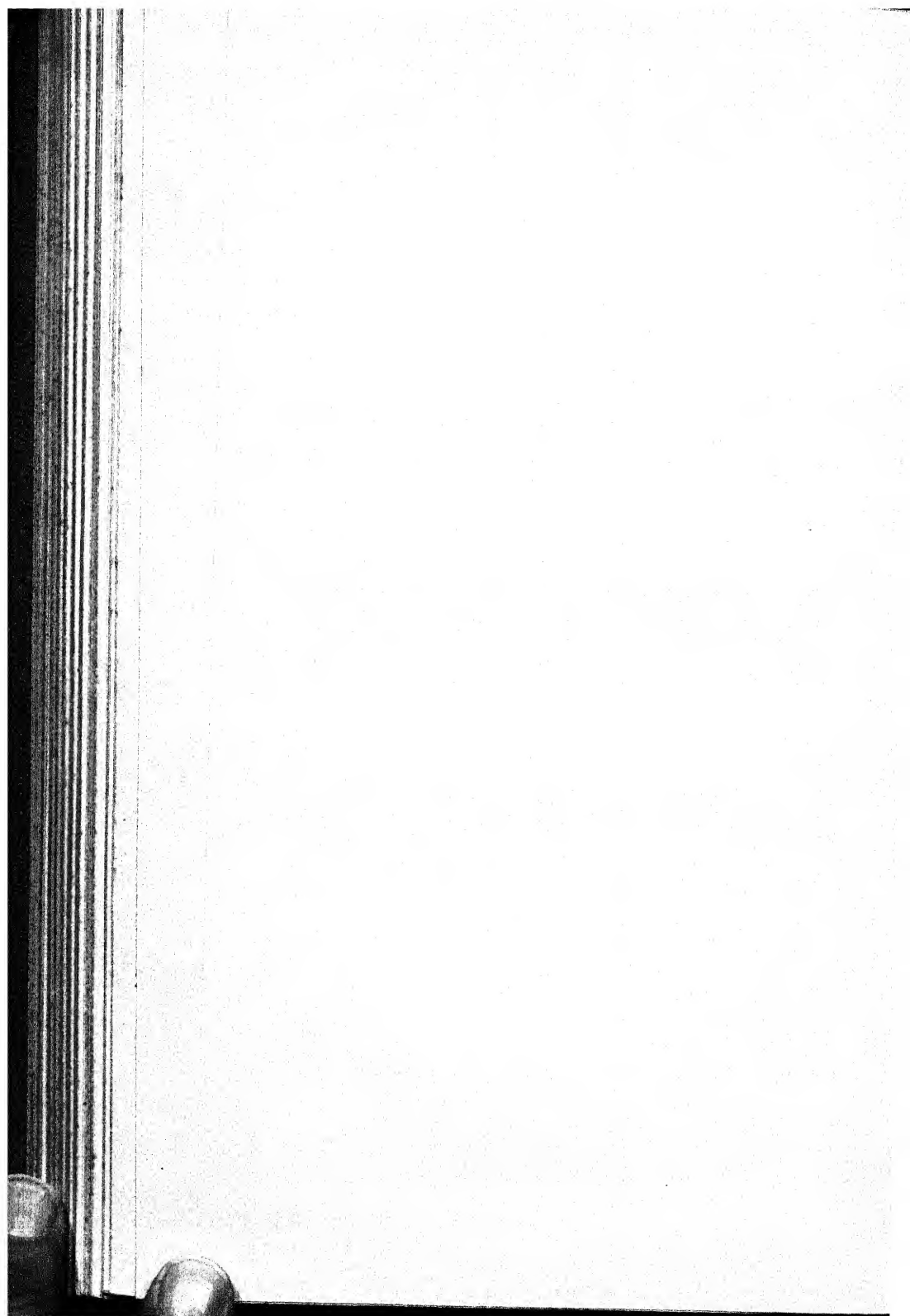
"I hear you have with you Mahmud (Khalifa), son of Hussein Pasha Khalifa, who is now with the Mahdi, and who gave up Berber. This Mahmud (Khalifa) wrote to his father, 9th October, 1884 (a letter) saying he was doing his best to delay your getting camels, that he wanted you to go in four columns, and you said: 'No, we will go in one column. I will not leave any behind.'

"You may not know what has passed here. The Arabs camped outside Khartum 12th March, 1884. We attacked them on 16th March, got defeated and lost heavily, also a gun. We then, from that date, had continual skirmishes with Arabs. Stewart was wounded slightly in arm on one occasion. When river rose we drove off Arabs in three or four engagements and freed the town. Sent up to Sennar two expeditions, had another fight, and again were defeated with heavy loss; the square was always broken. This last defeat was 4th September, 1884; since then we have had comparative quiet. We fired three million rounds; the Palace was the great place for firing.

"Arabs have the Krupps here, and have often hulled our steamers. Arabs captured two small steamers at Berber, and one on Blue Nile. We have built two new ones. The steamers had bulwarks, and were struck with bullets 1,090 times each on an average, and three times with shot each. We defended the lines with wire entanglements, and live shell as mines, which did great execution. We put matches, lucifers, to ignite them. The soldiers are only half a month

Copy of a Sketch sent on the back of
GENERAL GORDON'S
Letter of the
4TH OF NOVEMBER.





in arrears. We issued paper money, and also all the cloth, &c., in magazines. All the captives with Mahdi are well; the nuns, to avoid an Arab marriage, are ostensibly married to Greeks, Union Latin and Greek churches. Slatin is with Mahdi, and has all his property, and is well treated (but I hear to-day he is in chains). A mysterious Frenchman is with Mahdi, who came from Dongola. We have got a decora-



tion made and distributed, a  with a grenade in centre

three classes—gold, silver, pewter. Kitchener says he has sent many letters, and got none in reply; I have sent out during last month at least ten. Steamer with this leaves to-morrow for Metemmeh, and will drop spies on the way. Do not let any Egyptian soldiers come up here; take command of steamers direct and turn out Egyptian fellaheen (useless).

“(Signed) C. G. GORDON,

“(Postscript.)

“(and seal).

“If capture of steamer with Stewart is corroborated, tell French Consul-General that Mahdi has the cipher he gave Herbin. Hassan Effendi, telegraph clerk was with Stewart. You should send a party to the place to investigate affair and take the steamer.”

On receipt of a telegraphic summary of this letter, the Secretary of State for War telegraphed to Lord Wolseley asking how the information contained in it affected his plans. Lord Wolseley replied that the news from General Gordon made no change in his plans, but seemed to indicate the almost impossibility of his relief without fighting. He enclosed a copy of a reply which he had sent to General Gordon, which had to be sent in clear owing to General Gordon having sent away his cipher, and which Lord Wolseley explained was pompously worded on the chance of its falling into the Mahdi's hands :—

Lord
Wolseley's
plans
unchanged.

“*Wady Halfa, 17th November.*

“Yours of 4th instant, received 17th; the first I have had from you. I shall be at Dongola (Ordi) in four days. I shall have an army between Debbah and Ambukköl on a date which you can fix by counting 283 days on from this

Lord
Wolseley's
letter to
General
Gordon.

year's anniversary of the date of your commission as Major-General.*

"For obvious reasons I do not give you details how my army is composed, but it is strong enough to wipe Mohammed Ahmed and all his followers off the face of the earth. The more men he brings to meet me the better, as the greater will be the number we shall kill. My soldiers hope he will fight, as they like war and will be disappointed if, after coming so far from home, they have no chance of killing Mohammed Ahmed. I have seen so much bloodshed during my life that, personally, I should prefer to settle this business peacefully by pardoning Mohammed Ahmed and making him independent and hereditary Sultan of Kordofan, and establishing a strong native and local governor at Khartum who should be a hereditary ruler independent of Egypt, to rule over the provinces of Dongola, Berber, and Khartum, when you return to England.

"However, if Mohammed Ahmed is fool enough to fight I am quite ready to let my soldiers have their wish. They are all now on the river or marching along the banks towards Dongola; they are the flower of our army, all being selected men. I do not send this in cipher, as you tell me you have lost yours.

"Send me messengers every week, giving all information you possess. All messengers bringing letters will be most liberally paid."

This letter was sent in duplicate, one copy being forwarded through Major Kitchener from Debbeh, and the other through Colonel Colville from Merowi.† These and similar letters were sent in various ways, some being sewn up in the charms habitually worn by the Sudanese on the upper arm; others in the lining of camel saddles, or in the soles of the sandals; some in the hollow of the spear head, &c.

By the 16th November, the date of Lord Wolseley's arrival at Wady Halfa, 212 whalers had gone on from Gemai with troops and stores; 170 were ready, and 52 were being repaired. There was equipment at Gemai for over 400 boats.

As the water between Sarras and Sarkamatto was the worst on the river north of Merowi, and as the crews at this early stage were rather inexperienced in boating, it was considered necessary that a voyageur should be in each boat

November
16th.
Position of
whalers.

Voyageurs.
Number
in each boat.

* *I.e.*, on the 7th of January, 1885.

† The messenger who carried this letter was one of the most important witnesses to General Gordon's death. See Part II, Appendix 47.

on this part, and the officer commanding at Sarkamatto was instructed to send them all back with the exception of 10 per battalion, who were to go on as far as Abu Fatmeh, and return from that place.

Orders were also issued that only eight men and one voyageur were to embark in each boat, the object of this order being to ensure a sufficient number of boats arriving at Dongola to take up the Royal Sussex who had gone up in nuggers.*

Colonel Butler, C.B., A.D.C., A.A.G., had been placed in charge of the transport of troops in whalers from Gemai to Debbeh, and had given the following orders:—

Colonel
Butler
in charge of
whaler
transport.

"Colonel W. F. Butler, A.A.G.,

"1. You will, under the orders of the General Officer commanding communications, generally supervise the transport of troops in whalers from Gemai to Debbeh.

His orders.

"2. Lieutenant-Colonel Grove and Lieutenant-Colonel Alleyne will act under your directions, and you will give them the necessary orders accordingly.

"3. The principal points to which your attention should be specially directed are the following:—

"(a.) The embarkation of troops at Gemai into properly equipped boats, with sufficient voyageurs for their instruction, and sufficient reis for their guidance. (N.B.—Our number of voyageurs is limited; they will not afford one per boat. I suggest a small gang to each brigade of boats.

"(b.) The formation of brigades of boats according to the strength of the military units.

"(c.) Supervision of the stowing of the boats at Sarras with the supplies, which will be issued to them by, or under the direction of, Colonel Harrison, C.B., C.M.G.

"(d.) General supervision of the advance from different points of the route.

"Especial attention should be directed to see that officers commanding make their men portage when necessary, and that the crews of the several boats portage their own gear. The natives on the portages are for special transport purposes and not for the assistance of the troops.

"4. It is suggested that the end in view will best be met by you, for the present, confining your supervision to the Nile between Gemai and Sarkamatto, as after that it is hoped

* Owing to the head wind nuggers are not available after Debbeh.

the troops will be sufficiently accustomed to this work to proceed independently.

"5. Instructions have been issued to Lieutenant-Colonel Denison, commanding the voyageurs, to comply with any requisition for men he may receive from you.

" (Signed) REDVERS BULLER, M.G.
" Halfa, 31st October, 1884."

Inspecting
Staff Officers.

The following officers were also appointed inspecting staff officers between Semneh and Absarat:—

Colonel the Hon. E. Primrose, Grenadier Guards, from Semneh to Tanjur.

Colonel F. Burnaby, Royal Horse Guards, Tanjur to Mograka.

Colonel H. B. H. Blundell, half-pay (late Grenadier Guards), from Mograka to Absarat.

Their duties were to see that the greatest possible advantage was derived from the various means of transport employed for carrying up stores and supplies, and to assist the upward movement of troops.

On the 22nd of November, Colonel Butler left Sarras for Dal with a picked crew of six Kroomen and three voyageurs, and reached the latter place in four days and three nights. He reported that the river was falling fast, but did not consider that the difficulties of navigating it in our boats would increase. The South Staffordshire Regiment was in the meanwhile working its way up the rapids in its whalers, which proved a complete success. It was only necessary to take out and portage half their loads at most of the cataracts, and they were found to sail and pull better with loads than without. Colonel Butler reported them to be easily repaired, and with a few exceptions quite water-tight. He stated, however, that the work of tracking over the rocks was most destructive to the men's boots, and recommended that 3,000 new pairs should be telegraphed for at once.

It was found, however, that some delay had been caused by the regiment endeavouring to work by half battalions, and the following order was accordingly issued by the General of Communications:—

"The best working unit for whaler boats consists of four. No more than one company will in any case work together north of Sarkamatto.

Progress of
whalers.

Instructions
issued
for working
whalers.

"It is of the utmost importance that boats should make as much progress as possible to Dongola.

"The following hours will be followed, except when impracticable, viz. :—

"Reveille.—One hour before daylight, early coffee.

"Dawn.—Start.

"Breakfast.—Three quarters of an hour between 8 and 9.

"Meal.—One hour in the middle of the day.

"Halt.—Sunset."

The troops were also informed that Lord Wolseley had decided that the regiment making the quickest passage to Dongola, with the fewest damages to boats, gear, or cargo, should be selected to fill the post of honour in the further advance south.

The following rules were also issued :—

"(a.) In rapids a side line is to be used, not for hauling the boat up stream, but to keep her head to stream.

"(b.) One of the crew of each boat is to be in the bows; he must sound from time to time.

"(c.) In a rapid two Canadians are to be in each boat.

"(d.) Masts are to be struck before entering cataracts, unless special orders are given to the contrary."

All troops proceeding south of Sarras in whalers were to take with them, besides their "whaler rations," which were not to be opened north of Korti, 15 days' rations from Sarras, 20 days' from Sarkamatto, and 5 days' from Abu Fatmeh.

The following orders were also issued to officers proceeding by route march :—

"Camel marches will in the future not exceed the rate of 120 miles in seven days till further orders.

"The efficiency of a mounted force in the field is estimated by its powers of locomotion.

"The General Commanding-in-Chief, Egypt, impresses most strongly upon all officers, non-commissioned officers and men, that as the camel requires as much assiduous care and constant attention as does the horse, the most energetic and unremitting efforts are necessary for maintaining the condition of these animals.

"Officers are held personally responsible for all casualties which may occur from preventible causes.

"In their marching-in states, commanding officers will give the number of animals unfit and the cause."

Rules issued
for passage of
rapids.

Orders
issued for
route march.

November
18th.
Return of
Lord
Wolseley to
Dongola.
Small arm
ammunition
available at
this time.

On the 18th of November Lord Wolseley left Wady Halfa to return to Dongola. About two-fifths of the total force, and supplies for 10,000 men for about two months, were by this time at Wady Halfa, or to the south of it.

The state of the small arm ammunition was as follows:—

All infantry regiments up the river had 200 rounds per man.

The Mounted Infantry Camel Regiment had 215 rounds per man.

The Guards' Camel Regiment had 100 rounds per man.

Other camel regiments had 150 rounds per man.

There were in reserve at Dongola 56,000 rounds; between Sarras and Dongola, on the way up, 438,000 rounds; at Sarras, 60,000 rounds; and at Halfa 75,000 rounds.

Improvement
in working of
Sudan
railway.

The railway was working much more satisfactorily than at first, an average of about three trains running from Wady Halfa to Sarras daily, each carrying an average load of about 40½ tons, or 828 tons weekly, divided as follows:—

			Tons.	qrs.	cwts.
Whaler stores..	..	..	313	17	0
Commissariat stores	..	..	255	15	3
Various	..	..	133	10	0
Passengers	..	..	125	0	0
			828	2	3

Arrival of
General Earle
at Dongola.

On the 15th of November General Earle and staff arrived at Dongola, and owing to the prevalence of small-pox at that station, Sir H. Stewart with 24 officers and 374 mounted troops proceeded to Khandak on the 25th. Troops coming from the north were ordered to rendezvous at Khandak without touching at Dongola.

As already stated, the Nile Expedition had been originally organized with a view to concentrating 3,000 troops at Dongola, it being hoped that such a concentration would in itself be sufficient to enable General Gordon to raise the siege of Khartum. The news from Khartum, however, and the information collected by Sir C. Wilson on the attitude of the tribes, had proved that this hope was vain and that the relief of General Gordon could not be effected without a further advance and active hostilities. Lord Wolseley had therefore determined to concentrate a force of 8,000 men at Korti, with a view to a further advance to Shendi. As the supplies for this force were being brought up in whalers by troops, and as it was

necessary to bring up the whole of the supplies and therefore the whole of the whalers (600)* each with a crew of ten men, 6,000 infantry eventually concentrated at Korti, bringing up the whole force, including mounted troops, to 9,500.

At the time this decision was arrived at (November 18th) the troops were echeloned down the river as follows:—

November
18th.
Position of
troops.

Head Quarters	45	} At Dongola ..	1355
Mounted Infantry Camel Regiment	440		
Royal Sussex Regiment..	820		
Details	50		
Guards' Camel Regiment	320	} Between Dongola and Dal ..	970
South Staffordshire Regiment	600		
Royal Engineers..	50		
Duke of Cornwall's Light Infantry	670		
Essex Regiment	620	} Between Dal and Gemai ..	1955
Black Watch	225		
Voyageurs and Kroomen	370		
Royal Navy	70		
19th Hussars	300	} Between Halfa and Dongola ..	300
Black Watch	450		
Royal Artillery	85	} At Halfa, Sarras, and Gemai ..	1895
Royal Engineers..	300		
Heavy Camel Regiment..	225		
Light "	135		
Marines	100		
Commissariat and Transport Corps	150		
Bearer Company..	..		
Moveable Field Hospital	170		
Departmental, &c. ..	60		
Sick	220		
Gordon Highlanders ..	720	} Between Halfa and Assuan.. ..	1370
Heavy Camel Regiment..	230		
Light "	250		
Transport "Company" ..	70		
19th Hussars	50		
Royal Engineers..	50		

* Although there were 800 whalers on the Nile not more than 600 went up to Korti, the remaining 200 being chiefly employed on convoy work between Sarras and Dongola.

Royal West Kent Regiment	750	} At Assuan ..	1840
Royal Irish Regiment	750		
Sick	120		
Gordon Highlanders	50		
Sundries	50		
Essex Regiment	120	} Between Assuan and Assiut ..	500
Cameron Highlanders* and details	500		
Details	75		
		At Assiut.. ..	75
Total			10,260

Calculation
as to rate
of advance
to Korti.

On the 25th of November, 1884, it was estimated that, taking the rate of progress of the South Staffordshire Regiment as a basis, 10 days should be allowed from the date of a regiment's leaving Assuan to the embarkation of its last company at Gemai, 18 days from Gemai to the upper end of the Dal Cataract, 12 days for the 152 miles of comparatively clear water between Dal and Dongola,† and 7 days for the 132 miles between Dongola and Korti.

On this assumption it was calculated that the infantry (*i.e.*, the troops in whalers) should reach Korti by the following dates:—

South Staffordshire Regiment by the 15th December.

Essex Regiment by the 30th December.

Duke of Cornwall's Light Infantry by the 31st December.

Black Watch by the 5th January.

Gordon Highlanders by the 9th January.

Royal Irish by the 14th January.

Royal West Kent Regiment by the 18th January.

Cameron Highlanders by the 22nd January.

And that, as the mounted troops would travel faster than the infantry, the concentration would be complete by the 22nd of January, 1885.

Accuracy of
calculation.

Events proved that the time allowed in this calculation was accurate almost to a day, as although, owing to political events, the concentration never took place in the form intended, the head of the Desert Column left Korti for

* The Cameron Highlanders had been substituted for the Berkshire Regiment. They did not proceed beyond Korosko. See Lord Wolseley's original scheme of distribution, pages 104, 105.

† The Kajbar and Hannek cataracts were not formidable at this season.

Jakdul on January 1st, and the River Column left Hamdab 54 miles above Korti, on the 24th of January.

At the same time the calculation given in Appendix 35 showed that, on the above supposition as to dates of arrival at Korti, there should be at and beyond Wady Halfa, on 22nd January, in addition to the whaler rations carried up by the troops—

Groceries, 20 days	} for 8,650 men.
Meat, 8 days	
Breadstuffs, 34 days	

It will be noted that this calculation only took into consideration the supplies actually south of Halfa, and those with troops.

In connection with this concentration, the General of Communications was informed that Lord Wolseley wished to concentrate 1,200 camels of the organized Commissariat and Transport at Korti by the 31st December, and was directed to inform General Earle of his arrangements, as that officer was responsible for the transport arrangements south of Dongola.

Concentration
of camels at
Korti
ordered.

On the 30th of November, the head of the flotilla having reached the smooth water south of Hannek, the following General Order was issued:—

November
30th.
Head of
flotilla south
of Hannek.

“Dongola, 30th of November, 1884.

“1. The first English boats with troops on board having now passed the third cataract, the following Special Order will be read at the head of every regiment, battalion, battery, and detachment on three successive days, and will be published in all Regimental, Corps, and Station Orders.

General
Order issued
by Lord
Wolseley.

“2. To the soldiers and sailors of the Nile Expedition:—

“The relief of General Gordon and his garrison, so long besieged in Khartum, is the glorious mission that the Queen has entrusted to us.

“It is an enterprise that will stir the heart of every soldier and sailor fortunate enough to have been selected to share in it, and the very magnitude of its difficulties only stimulates us to increased exertions.

“We are all proud of General Gordon's gallant and self-sacrificing defence of Khartum, which has added, if possible, to his already high reputation. He cannot hold out many months' longer, and he now calls upon us to save his garrison. His heroism and patriotism are household words,

(s.c.1)

K 2

wherever our language is spoken; and not only has his safety become a matter of national importance, but the knowledge that a brave comrade is in need of help, urges us to push forward with redoubled energy.

"Neither he nor his garrison can be allowed to meet the sad fate which befel his gallant companion in arms, Colonel Stewart, who, when endeavouring to carry out an enterprise of unusual danger, was cruelly and treacherously murdered by his captors.

"We can, and, with God's help, we will, save Gordon from such a death.

"The labour of working up this river is immense.

"To bear it uncomplainingly demands the highest soldierly qualities—that contempt for danger, and that determination to overcome difficulties which in previous campaigns have so distinguished all ranks of Her Majesty's Army and Navy.

"The physical obstacles that impede our rapid progress are considerable; but who cares for them when it is remembered that General Gordon and his garrison are in danger.

"Under God their safety is now in your hands, and come what may we must save them.

"To British soldiers and sailors, it is needless to say more.

(Signed) "WOLSELEY,
"General Commanding-in-Chief."

December
13th.
Lord
Wolseley
leaves for
Korti.

On the 11th December the greater part of the Royal Sussex and South Staffordshire Regiments were already at Debbeh; one squadron of the 19th Hussars, and the Mounted Infantry and Guards' Camel Regiments, were on the march from Khandak to Korti.

On the 13th of December Lord Wolseley, accompanied by his personal staff and Sir C. Wilson, left Dongola for Korti, when he arrived on the 16th.

On the 15th the Chief of the Staff left Halfa for Korti, and arrived on the 24th. On the 16th, Sir H. Stewart, who had been appointed Brigadier-General, arrived at Korti with the Guards and Mounted Infantry Camel Regiments, and the squadron of the 19th Hussars. The Royal Sussex had arrived, and on the 17th the South Staffordshire followed, having come the entire way from Gemai in whalers.

On the 19th the embarkation of troops at Gemai was completed.

Before leaving Dongola for Korti Lord Wolseley had received information as to the state of supplies at Khartum, which made it advisable to gain touch of General Gordon with the least possible delay. He therefore felt that the emergency—the possibility of which he had foreseen from the first—had now arisen, and that he must arrange for the despatch of a mounted column across the desert to Metemmeh, where General Gordon's steamers were awaiting them. The remainder of the force was to follow the river in whalers, as originally intended.

Desert
column
decided on.

It was to prepare for the possibility of this course being forced upon him, that Lord Wolseley at the outset of the expedition, had organised the camel regiments.

The force to march on Metemmeh, was, therefore, ready and equipped for the purpose; and had there been any fair likelihood of its finding supplies for its subsistence at Metemmeh, it could have been despatched at once, and in one body, to that place.

It was, however, tolerably certain that little food either for man or for camel would be forthcoming in the neighbourhood of Metemmeh. The large Dervish force gathered round Khartum was little likely to have any large quantity of supplies between that place and Metemmeh. And, therefore, it became necessary for the force about to be despatched across the desert, to carry its food supplies with it.

Owing to many causes the number of available camels was very limited. They were not to be obtained locally in any numbers. No local camel drivers were to be obtained at all. The few men who had been enlisted for this purpose at Dongola, deserted when the camels were sent forward from that place. To obtain camel drivers elsewhere was difficult. There was, moreover, a scarcity of camel saddles. The number available locally, that could be made in Cairo, or that could be procured from India and elsewhere, was small. But it was the supply of food for any large number of camels, that constituted the most serious difficulty of all. In an enemy's country they could not be allowed to straggle so as to graze. They must be kept together and regularly rationed, collected in large numbers. Practically the requisite number of camels could not be collected at Debbah or Korti, nor could they have been fed had they been collected.

It is necessary to bear this in mind, for it influenced all the plans made for the desert march. It was for this reason that it was not possible to send all the troops, destined for

this operation, straight across from Debbeh or Korti to Metemneh in a single trip, and that the formation of an intermediate dépôt became necessary. It was known that a large and good supply of water would be found at the wells of Jakdul, about half way across, and Lord Wolseley determined to form the dépôt there. In the meanwhile the purchase of camels was pushed on with all possible speed. Orders were sent to the commandants at the various stations in the province to purchase all available animals and saddles. The General of Communications was also ordered to forward all available camel transport to the front, and was informed that if this caused difficulties at the portages, he must either hire or buy camels locally for that work.

Concentration
of supplies
at Korti and
Merowi.

All piquet boats were also ordered to be sent up on to the Hannek-Merowi reach, to facilitate the forwarding of supplies, which were being concentrated with all possible despatch at Korti and Merowi.

The Commandant at Abu Fatmeh was ordered to send to Korti all available supplies at his disposal, retaining only what was absolutely necessary for his own requirements.

The officer commanding at Dongola was instructed to send up by first opportunity the 800 ardebs* of barley, 1,600 ardebs of dhura, and 170 ardebs of dates, which he reported as being in the Mudir's stores there, and Lieutenant-Colonel Colville was informed on 26th December that 134 ardebs of dhura, 266 ardebs of dhura stalk, 66 ardebs of barley, and 660 ardebs of firewood would be required on the left bank at or near Merowi in six days time, available for rapid removal, and was instructed to buy these quantities.

Reserve of
Supplies at
Cairo.

The Chief of the Staff calculated that there were sufficient supplies south of Assiut for the whole force to the end of May, but had ordered a reserve of three months' groceries, two months' breadstuffs, and one months' preserved meat, for 10,000 men to be kept at Cairo. He also estimated that on the return journey from Khartum (which he believed would take place in March), owing to the lowness of the Nile, all steamers would have stopped running, and that therefore a reserve of 10 days' rations at Korti, 15 days' at Abu Fatmeh, 15 days' at Halfa, and 20 days' at Assuan would be required.

Supplies for
refugees from
Khartum.

In addition to the supplies for the troops, it was estimated that 8,000 refugees from Khartum would have to be provided for. For this purpose flour and dates had been purchased to

* $\frac{1}{4}$ th of a ton.

feed them down to Halfa. The Senior Commissariat Officer at Cairo was instructed to send 100,000 rations of Egyptian biscuit and rice to Halfa, and 150,000 rations to Assuan, for their use on the journey through Egypt.

On December 27th the following instructions were issued to the General of Communications:—

December
27th.

"As I have already informed you by telegram in cipher, Lord Wolseley has decided on dividing his force at Korti. One division will proceed by water and one by land. The force proceeding by water will consist of $1\frac{1}{2}$ squadrons* 19th Hussars and 4 regiments of infantry, viz., the Staffordshire Regiment, the Royal Highlanders, the Gordon Highlanders, the Duke of Cornwall's Light Infantry (it is possible that some of these regiments may be changed for others), battery of Egyptian Artillery, Egyptian Camel Corps, headquarters and about 400 camels of the 11th Transport Company.

Instructions
to General of
Communi-
cations, in-
forming him
of intended
divisions of
the force.

"Major-General Earle will command the force, with Colonel H. Brackenbury as his principal staff officer and second in command.

"This force will be concentrated at Hamdab, just above the Gerendit† Cataract, and will move thence, taking 100 days' whaler supplies per man with it.

"As you are aware, Major Rundle, E.A., has been directed to take steps to have a further supply of rations at Abu Hamed within four days of the arrival there of this force.‡ Major-General Earle will have one regiment placed at his disposal, in addition to the above-named force, from which to detail such posts on his line of march as he may require.§ As to these he has been directed to inform you.

"The force proceeding by land will be under the command of Brigadier-General Sir H. Stewart, and will consist of one-and-half squadrons of 19th Hussars, the four Camel Regiments, one battery of Royal Artillery, and a portion, or perhaps the whole, of the Royal Sussex Regiment. All the

* Afterwards reduced to 1 squadron, 2 squadrons being employed with the Desert Column.

† This was the name by which this rapid was then marked on the maps, but the proper appellation is that now given, Hajar Ulad Garbar.

‡ 200,000 rations of groceries, 100,000 rations of biscuits, and 500,000 rations of preserved meat, had been collected at Korosko, and Major Rundle had been ordered to convey them across the desert, with the aid of his Ababdeh irregulars, as soon as the arrival of General Earle's force at Abu Hamed should make it safe to do so.

§ This fifth regiment was afterwards withdrawn from General Earle's column, which he was directed to consider a flying one.

transport camels, not detailed for the water force, will accompany this force. General Lord Wolseley and his staff will accompany this force.* The intention is to form a post at the Jakdul Wells, which will be garrisoned by the Sussex Regiment, and there to collect 60 days' supply for the whole force. The mounted troops will then attack and occupy Metemneh, and either proceed at once to Khartum, or else bring some more supplies, and a garrison from Jakdul to Shendi as circumstances may direct.

"It will be evident to you that it is most desirable you should proceed to Korti at the earliest possible date you can, after you have arranged for a continuous flow of supply, and by organising a supply line from Korti to Shendi, endeavour to place on the river at the last-named place as many supplies as possible.

"Please bear particularly in mind the following :—

"1. It is probable that Sir H. Stewart's force will, at the outside, be able to take only 30 days' supply on with it to Shendi.

"2. It is believed that the Shendi-Khartum district is destitute of supplies.

"3. It is thought that General Earle's force should be able to reach Shendi in 45 days after leaving Hamdab.†

"The services of Major Kitchener, D.A.A.G., will be placed at your disposal to help with the tribes here, and it is desirable that when passing Dongola, you should bring on with you the Mudir, and keep him with you, or else send him forward to General Earle."

Instructions
to Principal
Medical
Officer.

The following Memorandum was also addressed to the Principal Medical Officer :—

"It is Lord Wolseley's intention to divide his force.

"All the camel troops, the Battery Royal Artillery, 150 men 19th Hussars, with the moveable field hospital and the bearer company, will march to Shendi *via* Jakdul. At Jakdul a post will be established, which will be garrisoned by about 400 men of the Sussex Regiment. The above force will be about 2,000 men all ranks, with the 400 Sussex in addition. It will have practically no communications, and it is not anticipated that we shall be able to evacuate its sick until it returns with them. We shall, however, endeavour to establish a small post at Shendi.

* In deference to the wishes of the Secretary of State for War, Lord Wolseley did not do so.

† *I.e.*, by March 10th.

"It is considered that the moveable field hospital and the bearer company—which latter, however, must be reduced by 40 non-commissioned officers and men, Medical Staff Corps, of its present establishment—will, with the medical officers attached to corps, provide enough attendance for this column.

"In relation to it, however, you must provide medical attendance for the hospital at Korti, and for the posts at Jakdul and Shendi.

"Another force will proceed by water. This force will consist of four regiments of infantry, and one and a-half squadrons, 19th Hussars. Major-General Earle will be in command.

"It is impossible to say what medical attendance will be required for this force, but you must provide, in addition to the Medical Officers of regiments, one field hospital of 200 beds. This hospital should have more than the regulated number of Medical Officers and of Medical Staff Corps. It should be organised so as to be easily sub-divided into 25 bed units, and so as to be transported in whalers. It should be sent as soon as possible to Abu Dom, and the Medical Officer in charge should report to Major-General Earle, or in his absence to Colonel Brackenbury for orders.

"By these arrangements there will remain, including the garrison on the Korti-Shendi road, four regiments of infantry between Dongola and Abu Dom, and, having this fact in view, and that it is possible the General Officer Commanding Communications may have to advance an infantry force from Korti to Shendi, Lord Wolseley considers it desirable that you should remain with the General Officer Commanding Communications.

"You will be good enough, therefore, to report yourself to Sir E. Wood on his arrival at Korti.

(Signed) "REDVERS BULLER,

"Korti,

Major-General."

"30th December, 1884.

Captain Lord Charles Beresford, R.N., was also instructed to form a Naval Brigade to march with, and be under the orders of, Sir H. Stewart, and take over and man any steamers that might be at Metemmeh.

Formation of
a Naval
Brigade.

Appendix 36 gives a list of the Staff of the expedition, and of officers employed on special service on the 1st January, 1885; Appendix 37 shows the Staff and distribution of the British troops in Egypt, not forming part of the expeditionary

December
30th, 1884.
Letter from
General
Gordon of the
14th.

Verbal
message from
General
Gordon.

Proposal by
the Govern-
ment to cause
a diversion in
Eastern
Sudan.
Lord
Wolseley's
views.

force, on the same date; Appendix 38 shows the distribution of the Egyptian Army on the 1st of January.

On the 30th of December, a messenger from General Gordon arrived at Merowi, bearing a piece of paper the size of a postage stamp, on which was written in General Gordon's hand:—

“Khartum all right. 14.12.84. C. G. GORDON.”

On the back of the paper was General Gordon's seal. The man was sent on at once to Lord Wolseley at Korti, to whom he delivered the following verbal message from General Gordon:—

“We are besieged on three sides: Omdurman, Halfiyeh, and Hoggiali. Fighting goes on day and night. Enemy cannot take us except by starving us out. Do not scatter your troops, enemy are numerous. Bring plenty of troops if you can. We still hold Omdurman on the left bank and the fort on the right bank. Mahdi's people have thrown up earthworks within rifle shot of Omdurman. Mahdi lives out of gunshot. About four weeks ago Mahdi's people attacked that place and disabled one steamer. We disabled one of Mahdi's guns. Three days after, fight was renewed on south, and the rebels were again driven back. Saleh Bey* and Slatin† are chained in Mahdi's camp.

“*Secret and Confidential.*—Our troops in Khartum are suffering from lack of provisions. The food we still have is little, some grain and biscuit. We want you to come quickly. You should come by Metemmeh or Berber. Make by these two roads. Do not leave Berber in your rear. Keep enemy on your front, and when you take Berber, send me word from Berber. Do this without letting rumours of your approach spread abroad. In Khartum there are no butter, no dates, little meat. All food is very dear.”

On receipt of General Gordon's letter of the 4th of November, the Government had consulted Lord Wolseley as to the advisability of causing a diversion at Suakin by occupying Tokar, and he had replied that the possession of that district would have an important effect towards establishing peace in the Eastern Sudan, a result which would greatly help his operations if it could be effected within 60 days, but that he doubted the possibility of doing this. He pointed out that any check to our arms in the Eastern Sudan

* Saleh Wad el Mekki, a Shaikiyeh in whom General Gordon had great confidence.

† An Austrian. The Mudir of Darfur.

would re-act most seriously on the success of his mission and the settlement of the Khartum question, and stated that he strongly objected to the proposal, unless a force of 2,000 picked and 1,000 ordinary British soldiers were despatched at once, under a good fighting leader. He protested very strongly against a proposal to employ Bashi-Bazuks, whose failure would injure his prospects very much, while "the cruelties and atrocities of such ruffians, acting under our flag or under our orders, would make even friendly tribes hate us." He concluded by saying:—"I have always contemplated the possibility of sending all mounted troops back by Berber and Suakin, to open road and crush Osman Digna. There can be no tranquility in the Sudan as long as he remains defiant. Of course, I may not eventually be able to do that."

On receipt of a telegraphic summary of General Gordon's message of the 14th of December, Sir E. Baring again consulted Lord Wolseley as to the desirability of operating from Suakin, and, in reply, Lord Wolseley sent the following telegram:—

"Gordon's message, of which I telegraphed an outline on 31st December, compels measures that will postpone my arrival at Khartum. He warns me not to leave Berber in my rear, so I must move by water and take it before I march upon Khartum. Meanwhile I shall have established post at Metemneh, by men and stores sent across the desert. I shall be able to communicate with Gordon by steam, learn exact position, and, if he is *in extremis* before infantry arrive by river, to push forward by camel corps to help him at all hazards. I presume worst disaster would be fall of Khartum and Gordon made prisoner. On this point I should like an expression of opinion on the part of Her Majesty's Government, without at all wishing to shift responsibility from myself on them. I agree expense should not prevent any advisable operation at Suakin. I view position thus: I feel most confident of success if Khartum can hold out until boats with troops can reach its neighbourhood. If I have to make a hazardous push on Khartum with camel troops only, I do not think military operations at Suakin could affect mine near Khartum. They would, however, as I said in my telegram previous, go a long way towards the final settlement, and if undertaken as proposed in my telegram of 3rd December, would most certainly succeed. Until Osman Digna is disposed of there is no

peace in Eastern Sudan. I do not believe Hadendowa will ever fight again as last year against us. Please send copy of this to Her Majesty's Government, as I should like Lord Hartington to see it."

General situation in the Sudan at the end of 1884.

In concluding this First Part of the history of the Campaign, a summary of the general situation in the Sudan will not be out of place.

Since the capture of Berber in May, the cause of the Mahdi had continued to prosper. Messalamia, a place of some military importance between Khartum and Sennar, fell about the same time as Berber. Darfur and the country about the Bahr el Ghazal, were subjugated by the rebel forces in the early summer. During the autumn the followers of Mohammed Ahmed pressed eastwards, into the territory lying between the Blue Nile and the highlands on the Abyssinian border. In the far south disaffection had spread to the neighbourhood of Gondokoro. As the insurrectionary movement developed and expanded, fresh tribes continually flocked to join the standard of the Mahdi. And so, in the closing days of 1884, the Sudan, from El Fasher on the west to the frontiers of Abyssinia on the east, and the great water way of the Nile, from about Shambah in Equatorial Africa, down to the defiles of the Monasir country, were, with the exception of certain isolated positions still in the hands of Egyptian garrisons, in possession of the Mahdiah.

Of the places still held by Egyptian troops, by far the most important was Khartum; and against this Mohammed Ahmed was directing his principal efforts. Sennar and Kassala were holding out stoutly. Girri, Galabat, and other places east of the Atbara, in occupation of Egyptian garrisons, were threatened, but were in no very immediate danger. Away in the south, Emin, almost entirely cut off from the world, and necessarily depending on vague rumours for information as to the course of events in the northern provinces, was already at bay.

Aware of the British advance along the Nile, the Mahdi was preparing to confront it with a portion of his forces, between Abu Hamed and Merowi. Osman Digna, undismayed by his reverses early in the year, was in the hilly country near Suakin ready to oppose any movement from that side. With the end of the year the period of preparation may be said to have closed, and the Nile Expeditionary Force, to have entered upon the period of active operations against the Mahdiah.

APPENDICES.—PART I.

APPENDIX O.

(See page 37.)

COMMANDER HAMMILL'S REPORT ON THE NILE.

Assiut to Assuan.

The Nile from Assiut to Assuan is so well known that any attempt to describe the river itself and country through which it passes, in this report would be superfluous. Captain Molyneux and Lieutenants Pigott and Poore, R.N., have in their reports given very exhaustive details on pretty well all subjects connected with the river between the above places; and Captain Molyneux and Lieutenant Poore extended their enquiry, and have afforded information on the same scale about the river, its banks, and the neighbouring country, between Philæ and Wady Halfa.

The most important portion of the river between Assiut and Wady Halfa (as far as this report is concerned) is undoubtedly that part between Assuan and Philæ, including the First Cataract.

From Assiut to Assuan the river is navigable all the year round for steamers of light draught, and for cargo boats, and for diahbihs also of light draught, either proceeding by themselves under sail or towed by steamers. I am aware that the postal steamers cease running above Esneh in April, and until the river rises in July; and that the postal steam launch is put on to take their place, principally, I believe on the score of economy. But steamers—and by steamers I mean the ordinary paddle-steamers—used on the lower Nile, can go up to Assuan at all seasons with care, and, in fact the patrolling steamers "Gizeh" and "Mahmudieh," did so in the middle of June this year, when the Nile was at the lowest; and also Egyptian troops were taken up in large iron barges towed by other larger steamers than the above, between June 1st and June 20th.

The principal difficulty in the way of navigation during the season of low Nile is produced by the shifting sandbanks in the river channel, but (as Captain Molyneux points out) there is always *some* part of the river with sufficient water in it. Craft ascending are proceeding against the stream, comparatively slowly; although they may take ground occasionally,

little difficulty is experienced in getting them off and into the right channel again.

The distance from Assiut to Assuan is 325 miles by the river, Postal steamers accomplish this distance in four days, proceeding during the greater part of the way only during the daylight and making several stoppages. At least *six* days should be allowed for steamers towing laden cargo boats or barges.

Several large towns are passed on the way up, and supplies of provisions can be obtained in these places.

The First Cataract.

Immediately above Assuan occurs the first serious interruption to river traffic by the Nile.

On approaching Assuan the desert hills close into the banks on each side, the river channel becomes narrower, and is interrupted at first by sandbanks and rocky patches, and then by islands, Elephantine Island and the Island of Atrum* being the first large ones met with. Above them the river becomes wider, but its channel is broken up by numerous islands, one of considerable size, especially opposite Philæ. The rapids constituting the First Cataract occur between the large islands opposite Philæ . . . and the Islands . . . about $1\frac{1}{2}$ miles further down towards Assuan, and are formed by the numerous small islands and rocky patches between these larger ones, contracting the channels through which the river finds its way. The whole distance between Assuan and Philæ, by the right bank of the river, is somewhat over 5 miles, and for about $1\frac{1}{2}$ miles of this distance the cataract may be said to extend.

From the information I have been able to obtain about this, the First Cataract, it appears that usually from January to the end of July the river is so low, and consequently the channels through which it flows between Philæ and Assuan so narrow, and the current in them so rapid, that it is not navigable, in the ordinary sense of the term, between these dates.

It is possible, however, to haul up native craft or *diahbiehs* of from 30 to 40 tons burden (200 to 300 *ardebs*) during this period of low Nile, with perhaps a little risk of accident.

There are three principal channels through the rapids by which vessels ascend. The western one when the river is low, is the most difficult on account of the rush of water through it, caused by the narrowness of the channel, and it is, therefore, avoided until the river has risen sufficiently to make it easier.

The other two are the ones used for the ascent of *diahbiehs* at all times, and the central one for steamers until the river has risen sufficiently to render the western channel practicable.

In addition to these three principal channels, there are two others close to the banks of the river, one on each side which

* Close to Elephantine Island.

are used by small boats, when the Nile is high, in order to avoid the larger rapids.

The Nile commences to rise at Assuan, generally about the 1st July, and at the end of that month, say, between the 25th July and 1st August, the central channel becomes practicable for steamers to ascend by, they being hauled and guided up through the bad places, and this continues until about the end of August, when the river will have risen sufficiently to enable the western channel to be used, and then steamers can ascend with little or no assistance from the shore.

This state of affairs continues for about two months, and then the river will have fallen so as to render only the central channel available for steamers for another month (*i.e.*, the end of November), and after that, until the next rise of the river, dahbieh's up to 30 or 40 tons and smaller craft can only ascend by the central and eastern passages, the western channel being impracticable.

During the latter part of August, and in September and October, steamers can descend by the western channel with assistance from the shore; and probably for a short time before and after this period, by the central channel; but the operation of descending with vessels of any size must always be more dangerous than ascending.

The central channel is the one generally used by large native sailing craft to ascend by (its banks being the most suitable for tracking), and the eastern one for descending by.

Native Assistance.

It is necessary to obtain native assistance for the passage of the cataract; at any rate, for the first steamers and craft ascending it, and until a sufficient number of our own people have become thoroughly acquainted with the channels and dangers in them, as well as the points where assistance should be given from the shore, and to what extent the assistance is required.

The First Cataract has always been worked and controlled by a sheikh, who is styled the Sheikh of the Cataract, the title descending from father to son. He provides the number of Arabs or "cataract" men required for tracking or guiding craft up and down the cataract, and is responsible for their getting through in safety. He gets no pay from the Government, and is obliged to take up Government craft free of charge, so it is to his interest to limit the times during which he says it is possible to take them up and down. The number of men required to assist in getting an ordinary Nile steamer up at the worst periods—*viz.*, shortly after the central channel has become practicable during the rise of the river, and shortly before it

becomes impracticable during its fall, is from 300 to 400, and the operation would probably take two days. If working all the "gates" or difficult places at once, so as to pass several steamers through as quickly as possible, a much larger number, up to 1,200 or 1,500 men could be employed, and then two steamers might get through in one day. As the river rises fewer men are required, and at the top of high Nile, parties on shore are not absolutely necessary, although, I imagine, it would generally be advisable to have some men ready at the worst gate, viz., in the western channel, to assist if required.

Sailing craft and large diahbiehs require assistance from the shore until the river has risen considerably; the number varying from 50 to 200, according to the size of the craft and period of the river's rise or fall. At high Nile, with a favourable wind, they can sail right up.

It is not necessary to unload either steamers or cargo boats for the ascent of the First Cataract at high Nile. At the periods, however, when much assistance is required from the shore, it would be advisable partially to do so, sending the portion of cargo disembarked by rail to Philæ, there to be re-embarked again. The difference of level of the river between Philæ and Assuan is about 19 feet.

Material Required for the Ascent of the First Cataract.

Good hawsers, of sufficient length, and stout rope for steady-guys are the main requirements.

Hemp hawsers, $6\frac{1}{2}$ -inch, and 200 fathoms long, and others of grass of the same size, are the most suitable.

Others of the same length of $4\frac{1}{2}$ -inch, and a good supply of $4\frac{1}{2}$ -inch rope for guys should also be provided, together with some grapnels, a sufficient amount of stuff for seizings, lashings, &c., and a number of leading blocks and stoppers, fenders, cork and wood, &c.

Philæ to Wady Halfa.

The distance from Philæ to Wady Halfa, by the Nile, is 216 miles. As mentioned before, Captain Molyneux, R.N., and Lieutenant Poore, R.N., have in their reports (April, 1884) given an exhaustive description of the river between these places. Lieutenant Poore has since furnished (July, 1884) a complete list of villages on this part of the river, with remarks as to the supplies they are able to afford, and the cultivation near them, and he has also prepared a tracing or chart of the river, which affords very valuable information with regard to it, accompanied by an account of the rocks dangerous to navigation between Philæ and Wady Halfa. It is, perhaps, sufficient to quote here a paragraph in Captain Molyneux's report as follows:—

"On the whole, this section of the river can be navigated without much difficulty or delay by both sailing boats and steamers," and this applies to the navigation all the year round. It is most difficult at low Nile, on account of the constantly shifting sandbanks, and this difficulty occurs principally at the shortest places, but the same remarks quoted before applies here, viz., that "there is always some channel by which steamers, &c., can pass," and it can be found with but little difficulty.

The time necessary to perform the distance between Philæ and Wady Halfa, by an ordinary steamer proceeding by itself at low Nile, is $3\frac{1}{2}$ or 4 days. At high Nile, 4 or 5 days are required in consequence of the increased velocity of the current.

Steamers towing laden cargo boats or diahbies, take 6 days to accomplish the distance.

GENERAL DESCRIPTION OF THE RIVER AND ITS BANKS FROM
WADY HALFA TO THE CLEAR WATER ABOVE THE THIRD
CATARACT AT HANNEK.

From Wady Halfa, or rather from the village of Ankash, where the Sudan railway terminates, to the lower part of the Second Cataract, a distance of about 5 miles, the river is open, about 800 yards wide and shallow at low Nile. The banks are low, even the desert sand coming right down to the water's edge. On the left bank, and on the right, there are palm trees, a strip of cultivation and scattered huts or small clusters of huts all the way.

The Second Cataract.

The cataract extends from Abkeh, its upper or southern end, for about $8\frac{1}{2}$ miles towards Wady Halfa, the river altering its general course in this distance from north to north-east. The width of the cataract varies (*i.e.*, measuring across from the extreme eastern to the extreme western channel) from about $\frac{3}{4}$ to $1\frac{1}{2}$ miles, it being narrower at the upper and lower extremities. At low Nile several of the eastern channels are dry, the rocks and sand-banks in them being many feet above the low Nile level, and the river flowing down principally through those towards the western bank.

The western bank is high nearly throughout the length of the cataract, the desert hills coming close down to it, and ending for a considerable part of the way in abrupt cliffs.

The eastern bank is low and fairly even for the first portion of the ascent, but gets higher towards the upper end, obliging the railway which hitherto follows it, to strike into the desert for a short distance, to avoid the hills and bad ground.

The whole of this valley, or river bed, is studded with masses of rock and islands, some large enough to afford subsistence for the inhabitants of small villages built on them, and which are in many cases, at low Nile, joined together, by the channels which separate them at high Nile being dried up.

The eastern channels are the ones that have always been used for hauling up steamers and diahbiehs. They are, generally, very narrow, and their windings at the bad places most tortuous; but the banks are, as a rule, good, and from them the movements of the craft to be got up can be controlled. In addition, being simply off-shoots of the river, so to speak, at high Nile, and on the inner curve in its turn from north to north-east, the rush of water through them, except at a few places, is not so great as it is in the main channels to the westward.

The main channels are interrupted by a great number of rocky islands, piles of rock heaped up in the most irregular way, and simply large boulders.

They are mostly covered at high Nile, and the rush of waters over and past them makes it impossible to ascend on that (the western) side, especially since the banks of the channels become so uneven and interrupted that no assistance could be rendered from the shore.

*Channels through which Steamers and other craft may be taken
past the Second Cataract.*

Starting from the lower end of the cataract, there is at first one channel close to the eastern bank, up which steamers can and have been hauled up. This channel extends for two-thirds the length of the cataract, when it divides; one branch taking a more westerly direction (and this is the one that is first available for steamers, &c., to ascend by); the other channel, keeping close to the eastern (right) bank of the river, becomes available for steamers as the river gets higher.

Ascending by the western channel, there are 15 gates or difficult places through which steamers must be dragged or guided, and of these, seven occur in the single portion of the channel below the branch, the remainder being in the channel itself.

At some of these gates it is possible to assist with the engines of the steamers, but at the others all the work must be done by hawsers and guys from the shore, and at them any craft ascending must be unloaded either wholly or in the greater part. Between the gates, steamers can proceed with their own power, assisted occasionally by steadying guys from the shore. In one place just below the branch, they can go for $1\frac{1}{2}$ miles in this way.

When the Nile is at a certain height, and whilst it remains at

this height, the eastern channel can be used, and by doing so, the total number of gates is reduced to 10. It is, generally, narrow and very steep (*i.e.*, the current very rapid) in places, and the rush of water through it is the principal difficulty, for in the bad places the way is straight. It is the only part of the cataract where artificial means have been used to improve the channel, blasting having been resorted to in one part for some distance.

The third channel, the central one of the three, can be used, when the Nile is sufficiently high, for the ascent of small diahbiehs and medium-sized cargo boats.

It must be understood that these smaller craft can be taken up by the principal channels also; but I may here remark that even when following these main channels, every possible chance is taken to avoid the rush of water in them by, so to speak, dodging round some little island or heap of rock when the river has risen sufficiently to make a channel there, and the depth of this new channel and its width is the only limit to the size of boat that can be taken round.

In the main channel, below the branch, there are one or two places where steamers would make short detours from it, when the river is very high, to avoid places rendered dangerous by the quantity of water coming down.

With regard to the time of year when the river may be expected to be sufficiently high to allow of steamers and other craft ascending the Second Cataract, the River Nile usually commences to rise at Wady Halfa about 22nd June, and should be high enough to allow operations to begin with the first steamers by the western channel about the 18th or 20th of July, this condition of things continuing for a fortnight, or until August 2nd.

About the 2nd August the river may be expected to be high enough to use the eastern channel, and to continue so, off and on, perhaps for 30 days.

From about the 1st September to the end of that month the western channel only will be available for steamers. The mid-channel is, as stated before, only used for cargo boats and diahbiehs, and may be used for any period of high Nile (*i.e.*, during August). Before and after that period, from the 18th July to 2nd August, and during September, cargo boats and diahbiehs go by the western channel.

These dates must not be taken as absolutely fixed; but they are given from the experience gained in former years.

Boats up to 300 ardebs (40 tons) can be taken up for about 20 days after passage is impracticable for steamers, and up to 30 or 40 ardebs, for about 45 days after that time.

Abkeh to Semneh, 28 miles.

On quitting the Second Cataract, ascending the river, the channel becomes broad and unbroken, the banks being higher than north of Halfa. The cultivation on either side is very limited, consisting of a few palm trees and what little can be grown on the banks left dry at low Nile. High hills on either side descend, so as to render the possible cultivated area a very small one. Approaching Sarras, the mountains in places form deep gorges, through which the river flows, causing the Nile between them to resemble more a mountain lake than a river. These features of the country and banks continue as far as Semneh Cataract, and beyond it nearly to Ambako, 17 miles, except that cultivation ceases almost entirely on leaving Sarras. There are some islands in the river near Sarras, but not important ones.

Cataract of Semneh.

The cataract of Semneh extends for two miles, and has two gates, the lower one being unimportant. It (the lower gate) is on the western side of the river, and about 300 yards long, and at high Nile it is easy of ascent.

I was informed that steamers can use their own power, and that guys only are required from the shore. They, and all other craft can pass this gate without unloading. From the lower to the upper gate the channel is clear for $1\frac{1}{2}$ miles. The upper gate is difficult. Here the mountains come right down to the bank on either side, and the channel between them is interrupted by a great barrier of rocks, quite 200 yards wide, across the river, the latter finding its way at low Nile through a gap or narrow channel in this barrier towards the western bank.

On the eastern side there is another channel, partly dry at low Nile, which is the one used for steamers and other craft to ascend by when the river rises sufficiently; it is narrow, and the rush of water through it must be very great indeed.

All cargoes must be unloaded before passing this gate, and transported by land over the hill to a point above the gate, a distance of about half a mile, and there re-embarked.

On each bank at this gate, and commanding the river, are the ruins of an old fort, and the position would be a most formidable one for defence against a force ascending or descending the river.

There are hardly any inhabitants in this part of the country, but at the second gate itself, two or three mud hovels exist in one corner of the ruins mentioned above.

From the upper gate to the lower one, both banks are generally high and irregular, but close to the upper gate on

each side suitable places could be found for disembarking men, stores, &c.; but roads would have to be formed for conveying them past the gate for about half a mile.

Semneh to Ambako, 17 miles.

Approaching Ambako Cataract, the mountains encroach less on the river banks and allow of slight cultivation. Islands and patches of rock appear in the river channel and impede navigation.

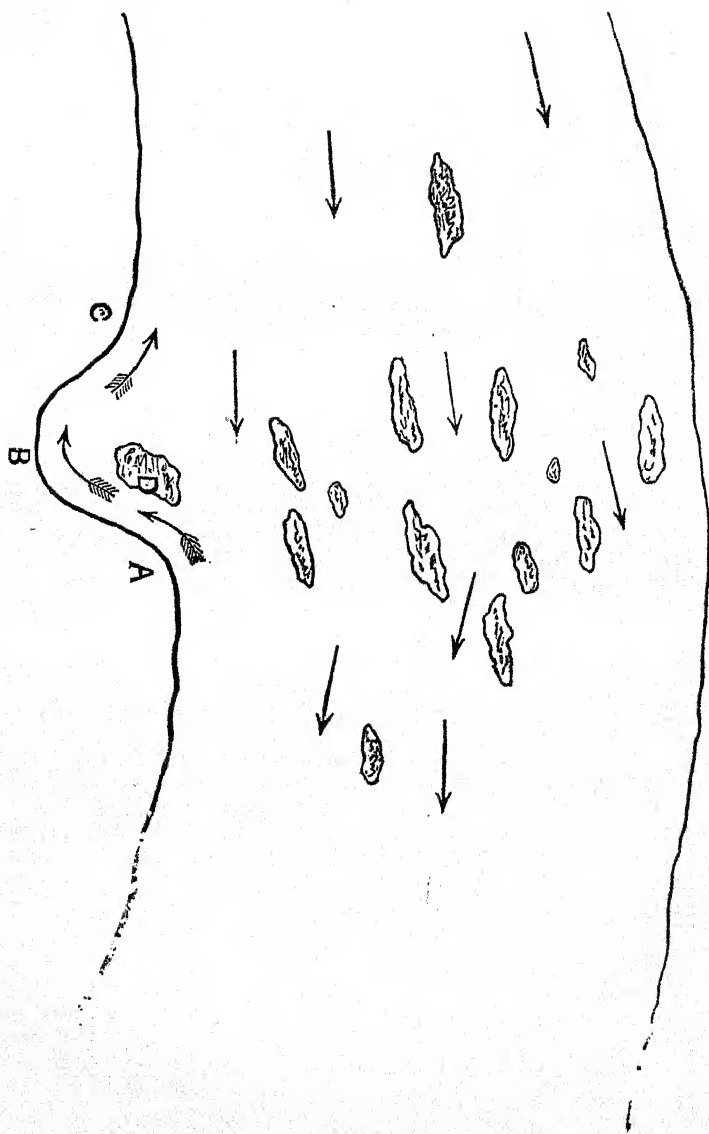
Ambako Cataract.

The cataract of Ambako is not a difficult one. Approaching it from the north the channel becomes interrupted by numerous rocks and islands, confining the current between them and causing it to become so rapid that steamers and other craft ascending cannot face the rush of water in the main channel; and it becomes necessary to use a bye one which exists on the eastern side of the river.

At the cataract the river takes a slight bend to the left (supposing you to be ascending it) and at the point A (*see* annexed rough sketch) where this bend occurs on the eastern side, the bank recedes to B, and then curves round to C, to follow the general direction of the river again, and this curve of the bank together with the island, D, form a channel at full Nile (it was dry when visited on 29th May), through which steamers and other craft can be got up.

Guys are used from the shore and island, and it is necessary to lay a hawser out once, when the corner A is reached to B, to haul up by.

The whole length from A to C is about 500 yards, and the bank of the river is good; it is not necessary to unload at all to pass this gate; steamers would use their own engines, and diahbiehs their sails, to assist. Above the gate the river opens out and becomes less obstructed, although there are still numerous islands and rocks in it, necessitating most careful navigation. The banks here are similar, low and sandy, but broken in places by ridges of rocks, necessitating the path leaving the bank to avoid them.



Ambako to Tanjur, 9 miles.

From Ambako to Tanjur the banks are low, but broken by ridges of rock, and at Tanjur on the right bank are high hills, forming part of a chain which extends unbroken as far as Akashch along the river, and into the desert beyond that place.

The channel of the river is more or less broken at low Nile by islands and rocks, the current being throughout more rapid. Some of these islands are extensive, forming two branches of the river and affording cultivable plots to the inhabitants, who live on them in preference to living on the river bank.

Cataract of Tanjur.

The cataract of Tanjur is, next perhaps to the upper gate of Semneh, the most difficult one between Abkeh and Hannek.

It extends altogether for about three miles, and there are two gates to be passed. Ascending the river, the channel becomes interrupted by small and then large islands and piles of rocks. Then a large island (divided in two at high Nile by a cross stream) extends for about one mile, or a mile and a quarter, separating the river into two channels, the principal one, through which nearly all the water flows at low Nile, being to the eastward. This channel is deep and confined by the island on one side, and steep banks on the other, and the rush of water through it at high Nile must be tremendous. The western channel is fairly broad and much shallower, and is the one used for ascending steamers and dahabiehs.

The two gates are in this channel, they are both straight and clear, and are formed by the channel being more narrow and confined at these points. The rush of water through them is the only difficulty to be overcome. The lower gate of the two is the easier. It is situated about half way up the island, and I am informed that steadying guys only are required to be used by steamers when passing it, and this I should have been led to expect from its appearance.

It is short, not more than 100 yards long.

The other gate is just above the upper end of the large island, and is formed by another island, in continuation up stream of the large one, and the western shore. This gate is about 300 or 350 yards long; it is narrower than the other, and the rush of water through it must be greater. Steadying guys are required, and our guides stated that the assistance of a towing hawser from the western bank, which is good and fairly even here, was necessary even for steamers. This last I rather doubt myself, for, judging from other similar places pointed out to me, through which it is said steamers can go without assistance

beyond guys, I should have thought that at high Nile they would have been able to steam up here.

Diahbiehs must of course be hauled through both of these gates.

The guides stated also that a portion of the cargo, if heavily laden, must be disembarked here (the upper gate) and carried by land about 400 yards. There are suitable places on the western bank for doing this, if necessary. They say a steamer should be able to pass the Tanjur Cataract, with proper assistance, in five or six hours.

At a short distance above this large island, the channel becomes clear for some 1,200 yards, and then a line of rocky isles (low to westward) crosses the river, but I am told that when the river is high no difficulty is experienced here. Craft would ascend near the western bank, and the ridge would be almost, if not entirely, covered. There is a prominent isolated hill, quite 1,000 feet high, on the western bank abreast this line of islands, and the telegraph wire from Halfa to Dongola passes it, close to the river.

The Sheikh of Okmeh accompanied us whilst visiting the cataract, and he was apparently well acquainted with the river from Abkeh to Dal and Koyeh. He was very civil and attentive, as, in fact, we found all the headmen of villages, &c. to be.

The left bank for the extent of this cataract is low, and even the desert sand comes right down to the river. The right bank is high, precipitous in places, and very much broken up by large masses of surface rock which prevent the path from following the bank.

From Tanjur to Akasheh, 14 miles.

The channel is interrupted by rocks here and there, but there are no considerable islands, until Okmeh is passed, when there are some large ones on the eastern side, but the river is so broad here that they can have but little effect on the navigation.

The left bank is low, the desert sand coming right down to the water, until just before reaching Akasheh, where there are a few palms and a thin strip of cultivation. The right bank is high and interrupted at first, but becomes low and even as Okmeh is reached, and continues so as far as Akasheh, the chain of hills before mentioned following the river's course about half a mile from the bank. From Okmeh to Akasheh there is scanty cultivation.

Cataract of Akasheh.

The cataract of Akasheh is an easy one. In ascending the river, for some distance before reaching it, there are several islands, particularly on the east side, but the river is wide, and they would not much affect the current.

At Akasheh Cataract the river takes rather a sharp bend to the right. A ridge of rocks crosses the river here, with two principal passages towards the west bank, through which the river runs now at low Nile. Another channel is formed, when the river rises, close to either bank, that on the western bank being used for diahbiehs with towing assistance from the shore; but steamers can at three-quarters Nile steam up the main channel without any assistance. No unloading is necessary here. Both banks are continuous and even.

Akasheh to Dal, 10 miles.

The river presents a long stretch of nearly unbroken water, hemmed in on either side by high hills. This continues until the lower end of the Cataract of Dal is reached, where it takes a sharp bend to the right and opens out considerably, presenting an appearance unseen before. Instead of jagged and pointed rocks and rocky islands breaking up the stream, with a few stout trees growing on them where they are large enough, we have a comparatively smooth bed of boulder granite over which the river runs rapidly but evenly. When the granite boulders are above the low Nile level, they are covered with a species of willow not seen anywhere north of this part of the river.

Cataract of Dal.

This cataract, although extensive, is not difficult to ascend. It is about four miles long, the river channel throughout its length being quite 1,500 yards broad, and interrupted by numerous small islands, ridges of rocks, and isolated rocks, which produce rapids. These islands, rocks, &c., are not, however, high above low Nile level, and at high Nile a broad rapid stream may be expected to be found throughout the length of the cataract, the numerous obstructions in it requiring very careful pilotage.

About half way up the cataract the river takes a bend to the left, and here, perhaps, is the most difficult part; craft having to pass from the right to the left bank obliquely to the stream. Little, if any, assistance from the shore is required, except, perhaps, with steadying guys, and no unloading or lightening is necessary. Steamers can steam right up at high Nile, and diahbiehs can ascend without assistance if the wind is strong and favourable. The left bank is unbroken from top to bottom of the cataract, and is low and even. The right bank is for the lower half of the cataract higher, evenly undulated, the path following it. For the upper half it is interrupted by rocks and hills which run down to the water's edge, obliging the path to take a long detour to arrive at the village of Dal, above the cataract.

Dal to Amara, 16 miles.

The navigation of the river is unimpeded between these places; the banks are low and even, and generally the country is more open. There is a strip of cultivation, with palms on the right bank, and the population is more numerous; the left bank is barren as before.

Amara Cataract.

The cataract of Amara is the easiest of ascent of any between Abkeh and Hannek. It resembles in its principal features the Cataract of Akasheh, being formed by an interrupted ridge of rocks running across the river channel, but is easier through the course of the river here being straight instead of curved. No difficulties should be experienced here by steamers steaming up by their own power, or diahbiehs ascending under sail, with the wind favourable.

The banks here are low and even, palm trees grow on the right bank, and on the left the desert sand comes right down to the river.

Amara to Kajbar, 65 miles.

As far as Koyeh the river is clear of obstructions. The banks are low and even with increased cultivation, and what necessarily follows, more inhabitants. The adjoining country is more open, the palm trees on the banks more numerous, and in the river a few boats may be seen which ply between Sucki and Kajbar at low Nile. At Koyeh there are a few islands in the river at the point where it bends to the eastward, and it was proposed to utilize two of these in constructing the railway bridge intended to cross the river here.

From Koyeh to Tinari the river is clear, but the banks become higher, less cultivated, and the hills close in on the river. At Tinari there are some large rocks in the channel, but they would not affect the navigation to any extent.

From Tinari nearly to Kajbar the banks are high, the mountains in some places coming right down to the river and preventing the path following the bank.

The country gradually opens out towards Delko, and from there on to Kajbar the banks are low and fairly regular on both sides, but there is little or no cultivation on them until Kajbar is reached. At and near Delko there are some large islands in the river, and these appear to be well cultivated (they would not impede navigation), otherwise the channel is clear.

Cataract of Kajbar.

This cataract is also easy, and again resembles closely Akasheh and Amara. A low ridge of rocks crosses the river (which is about 1,200 yards wide at this point), and is probably all covered at high Nile. At low Nile, when we saw it, there are several small channels through the ridge, the principal ones being towards the western (left) bank. No difficulty for steamers or sailing craft to ascend by their own power. The banks here are even, low, and palm trees grow on them.

Kajbar to Hannek, 30 miles.

The channel is clear for a considerable portion of the distance, but as Hannek is approached there are large islands in the river.

The banks are low for the first part of the distance, and there is a thin strip of cultivation on them, but the hills gradually close in, although they are not so high, nor are the banks so precipitous, as at other places lower down. Towards Hannek the country again opens out, and when the Third Cataract is passed, the river flows through a plain of apparently considerable extent.

Generally throughout the distance from Wady Halfa to Hannek, the banks differ from each other in a marked manner.

For nearly all the way the sand drifts from the Libyan Desert, and comes close down to the water's edge, deluging all the land that might otherwise have been cultivated, and making the left bank quite unlike the opposite one, where every little available patch is seized upon for cultivation.

Third Cataract, or Cataract of Hannek.

This cataract extends for $3\frac{1}{2}$ or 4 miles, and the river throughout its length resembles more nearly the Second Cataract in appearance than any other of the places alluded to, between it and Abkeh. The channel is altogether broken up by islands and rocks, and the river finds its way down by many passages between them, although there are two principal ones, one towards either bank, that at low Nile take most of the water. The one used for the ascent of steamers is on the western bank; there appears to be only one gate of any consequence, and this is about three-quarters of a mile from the upper end of the cataract. It can be passed at full Nile, and even at three-quarters Nile, by steamers, the assistance of guys only being required. Sailing craft can ascend it with assistance from the shore, or probably with a strong favourable breeze would be able to sail right up. So little difficulty seems to be experienced

here that our guide stated that a little more than half an hour's delay would be experienced in getting a steamer through the gate.

I observed a channel also inside the islands on the eastern (right) bank, which looked a very favourable one for ascent at full Nile, being away from the main stream, of good depth, and the banks regular.

Probably diahbiehs could ascend by this channel also, and perhaps steamers, but our native guides did not say so, and I expect it never has been tried. From all I could learn about this cataract, it does not seem to be more worthy of being classed as the Third Cataract of the Nile than the cataract of Tanjur does, and I imagine it has received its name rather from its extent and resemblance to the Second Cataract, than from any physical difficulties to ascent it presents. The banks of the river at the Third Cataract are low and generally even, but broken on the right bank in places by low ridges of boulder granite, not sufficiently, however, to prevent the path closely following the bank.

There is cultivation on the left bank pretty well throughout the length of the cataract, and at places on the right bank.

Some of the larger islands in the river here are well cultivated, and on them villages are built.

Speaking generally of the cataracts between Abkeh and Dongola, none of them present any difficulties greater than would be experienced at particular gates of the Second Cataract, and if they were all grouped together in one cataract, I am of opinion that the combined difficulties presented by them would not exceed or take a greater time to overcome than those offered by the upper half of the Second Cataract.

To recapitulate—

The cataracts between Abkeh (the upper end of the Second Cataract) and the clear water above the Third Cataract are named as follows:—

1. Semneh.
2. Ambako.
3. Tanjur.
4. Akasheh.
5. Dal.
6. Amara.
7. Kajbar.
8. The Third Cataract, or Cataract of Hannek.

The distances, or intervals of clear water or fairly clear water, between them are as follows :—

				Miles.
Abkeh to Semneh	..	..	..	28
Semneh to Ambako	..	..	..	17
Ambako to Tanjur	..	..	..	9
Tanjur to Akashch	..	..	..	14
Akashch to Dal..	..	..	..	10
Dal to Amara ..	..	..	..	16
Amara to Kajbar	..	..	..	66
Kajbar to Third Cataract at Hannek	..	..	..	30
Total	..	..	..	190

The length of broken water at the several cataracts may be taken approximately as follows :—

				Miles.
Second Cataract	..	..	..	8 $\frac{1}{2}$
1. Semneh	..	..	..	2
2. Ambako	..	..	..	1
3. Tanjur	..	..	..	3
4. Akashch	..	..	..	1
5. Dal ..	..	..	..	4
6. Amara	..	..	..	1
7. Kajbar	..	..	..	1
8. Third Cataract	..	..	..	3
Total	..	..	..	22 $\frac{1}{2}$

The length of clear and broken water, therefore, from the lower part of the Second or "Great" Cataract to the clear water above the Third Cataract is approximately 212 miles.

* * * * *

MEANS REQUIRED TO ASCEND CATARACTS, WITH A DESCRIPTION OF THE MOST SUITABLE STEAMERS AND OTHER CRAFT FOR THE WORK, AND NATIVE ASSISTANCE REQUIRED, INCLUDING PILOTS.

Steamers intended to ascend the Second Cataract and cataracts above, should not exceed 100 or 110 feet in length, and 30 or 32 feet beam over paddles. They should be strongly built and flat-bottomed, drawing little water, but rather more forward than aft, not more than 4 or 5 feet when loaded. Paddle steamers are preferred, for although they possess the disadvantages of

greater beam, the paddles are not so liable to injury in these waters as the screw, and since towing power is a great desideratum, it is more likely to be obtained in light draught steamers with the former means of propulsion than with the latter.

They should be provided with a powerful steam-winch in the bows, and good bollards on each bow and quarter, and amidships, to secure towing and steadying hawsers and guys to. Steamers of smaller dimensions than the above could naturally be taken up more easily, and in case of a military expedition up the river, they would be most useful and necessary. As regards the most suitable cargo-boat for ascending the cataracts, supposing them to have to ascend in considerable numbers, all the information I was able to obtain pointed to a medium-sized boat as being the best and most workable, viz., a boat of 200 ardebs or about 28 or 29 tons, not exceeding 40 or 50 feet long, with a draught, when loaded, of not more than 3 feet, and when unloaded, $1\frac{1}{2}$ feet.

They should be flat-bottomed, drawing more water forward than aft, and strong generally about the bow, with good bow and quarter, and towing bollards or cleats. Nile boats are not absolutely necessary if the above conditions are fulfilled, but they all have sails, and the latter are very necessary, as can be judged from other portions of this report, to assist progress, both when passing and between the cataracts. Larger boats, barges, or diabiehies can be taken up, but since they have no steam power to assist them, the labour would be much greater. Probably, boats up to 200 ardebs, as mentioned above, might be taken up the Second Cataract of Semneh, with a portion of their cargo only removed; but it would generally be the safer and quicker plan to lighten them altogether at the difficult places, and load again when the clear water is reached.

Respecting the material required, the most suitable size of hawser for hauling up and towing purposes, would appear to be $6\frac{1}{2}$ -inch hemp, or its equivalent in grass.

The custom apparently hitherto in getting vessels over the cataracts, has been to make the hawser or hawsers fast on board, and then to drag the craft up by the exertions of a considerable number of men ashore. A good steam winch in the bow of each steamer, would save a great deal of trouble in many cases, besides being more under control.

For steadying guys, $4\frac{1}{2}$ -inch hemp or its equivalent in grass should be sufficient. Hawsers should be not less than 200 fathoms long, and guys 75 fathoms. In one place on the Second Cataract, I paced a distance of 350 yards where a hawser would be required, so that a length of 200 fathoms would be necessary there.

The long hawsers are for use as bow and quarter lines, or

right ahead for hauling vessels up by, and for towing purposes. The guys are for steadying them from the banks when passing difficult places. Each large steamer should have her own equipment of four hawsers and four guys, and they might be made up as follows:—Hawsers, two hemp, one grass of equivalent strength, and one steel ditto, the barrel of the winch being large enough to take the latter. Guys, two grass and two hemp, fitted with hook and thimble at one end.

In addition to the above, they should each be provided with four long luffs, two anchors of about 10 cwt., rope stoppers and chain nippers for steel hawser, four grapnels, heaving lines, chafing mats, spun yarn, parcelling, &c.

I do not think capstans or winches on shore are indispensable, and they would be generally hard to fix in suitable positions, but a few of them fitted with proper platforms, would very likely be useful and should be supplied.

In addition to the above supply of ropes to steamers, a large quantity of material of the same description would be required for hauling up cargo boats, diahbiehs, &c., and as spare hawsers to replace worn ones and supply losses, &c. I would recommend for this—

20 6½-inch hemp.	Length, 200 fathoms.
20 4½ " "	" 200 "
10 4½-inch grass.	" 200 "
4½-inch rope for guys.	" 3,000 "
200 blocks (stropped with hook and thimble, assorted, snatch and leading), capable of taking hawsers and guys.	
A considerable quantity of stuff for seizings, lashings, chafing mats, &c.	
Six 8-inch hawsers (hemp).	
Four 3½-inch hawsers (steel).	
Four 15-cwt. anchors, &c.	

The heavier material would be useful in places to lay down moorings, in order to get a better point to secure the hauling-up hawsers to.

Without the experience of actually taking a steamer or large diahbieh up any of the cataracts, it is not easy to state exhaustively all that might be required in order that the work should be performed in the shortest time, and the above therefore must only be looked upon as an estimate drawn as far as possible to cover the probable equipment.

Native Assistance Required.

Although I have no doubt that with all modern appliances, steamers properly fitted and with the assistance and the ex-

perience (if freely and fully given), of the Arabs who live near the cataracts, and the river pilots mentioned hereafter, the operation of getting steamers up might be performed with but little native assistance, supposing a sufficient force of our own men to be employed; yet these people look on the cataracts as their own property. They expect, in the case of an expedition trying to ascend them, to make money, and that the inhabitants of the surrounding districts shall make something out of it too, and even if the natives did very little of the actual work (but I expect they would do a great deal), I think it would be good policy and expedite matters to employ native labour largely. Ibrahim Effendi, my guide, estimated that to work the Second Cataract thoroughly, keeping the steamers, cargo boats, &c., continually passing the gates, three or four thousand men should be employed, distributed along the whole length of bad water, and from the information I have obtained from other sources this number does not seem at all an excessive estimate, and it would be safer to say 5,000.

The district of Wady Halfa could not furnish the number, and one-half should be drawn from the north and one-half from the south, *i.e.*, one-half from the province at Esneh and one-half from the province of Dongola, and the Mudirs of the provinces should be directed to furnish these men and control their work, either themselves or in person of their Vakils (which control I am assured is very necessary, and would be sufficient). They would be paid at the rate of three or four piastres per diem. I am of opinion that the work would be much more quickly and effectively performed, if the presence of the Mudirs themselves or their Vakils could be assured.

The Esneh people would work the Second Cataract principally, and those from Dongola the Second Cataract also in the first instance, and then the cataracts above.

It would be necessary to provide stores of provisions (of flour, beans, &c.) at Abkeh (upper part of the Second Cataract) in order that the working parties might not be delayed, for the country round would not support these strangers. The price of whatever was provided would be deducted from their pay.

Undoubtedly a body of disciplined men would be required, their numbers depending on the size of the expedition contemplated, and their duties would be to furnish guards at the different point where stores and material must accumulate, and to keep order.

Pilots.

Each steamer requires three experienced hands for pilots, one at the wheel, one in the bows, and one on shore. There are three principal pilots at Assuan.

1. Rhambalun.
2. Musa Batran.
3. Kavar Nugu.

At Dongola there are three or four, under one captain called Abu El Samid. These pilots all provide 30 or 40 experienced men from Assuan, and the same number from Dongola, and they would be sufficient for all the work required.

Time probably required to ascend from Wady Halfa to Dongola.

The time required for one steam vessel to ascend the Second Cataract, under favourable circumstances, and supposing all material and working parties, &c., to have been provided beforehand, should be about six days. This I give on the authority of the Arab pilots who have previously seen steamers taken up, and from the account of the last operation of the kind in 1877, when three steamers leaving Wady Halfa on August 10th, reached Dongola on the 25th of that month.

I am of opinion that 14 days, at least, should be allowed for the passage from Abkeh to Dongola, so as to allow for all contingencies, but a less time, 9 days, might be sufficient.

Existing Transport, Fuel, and Provisions.

The available river transport below Wady Halfa is well known and has been exhaustively reported on. Between Wady Halfa and the Third Cataract, there are very few boats indeed. I only saw one near Sarras, between Abkeh and Koyeh, and about half a dozen more between Koyeh and Hannek. There are, of course, a few more, but their numbers cannot be great; they are mostly ferry boats of from three to five tons, but some work up and down the long stretch of clear water between Amara and Kajbar.

Above the Third Cataract I am informed that there are plenty of boats, some of good size, and all authorities agree in confirming this.

In the event of an expedition of any size ascending the river, it would be advisable to collect sufficient transport above Semneh Cataract to take the forces intended to be moved, with stores, &c., and to keep, say, two steamers, powerful tugs, if possible, between Sarras and Semneh, and some barges and diahbiehs. They would be employed in conveying the men, stores, &c., in detachments from Sarras to Semneh, where they would have to be all disembarked and moved past the cataract, and collected in the transport provided above, ready to make the final start from above Semneh.

Fuel.

There is at present no coal above Halfa, and very little at that place. Above Halfa, I was informed that sunt wood in any quantity could be obtained, and this is a good substitute for coal; but of course is open to the usual objection on the score of space occupied, quantity required, &c., and it would not do to be entirely dependent upon it; indeed, I have heard from other sources, that the supply itself is getting small. Stores of coal should, therefore, be collected at Sarras and Semneh.

Provisions.

A force ascending the river should not be in any way dependent upon the country for provisions, above Assuan, and between that place and Dongola; although here and there a scanty supply might be obtained. The country is generally so poor as barely to afford subsistence for its own inhabitants, and that is often only obtained with considerable labour in the way of irrigation.

Signal Communication.

There would be but little difficulty in establishing a series of heliograph stations on the right bank, if the desert routes were in our hands, from Abkeh to Hannek, there being prominent mountains all the way at intervals suitable for the purpose. It would be most useful, and, in fact, necessary, to establish telegraphic communication from Ankash to Abkeh, Sarras and Semneh, and to the other important points on the right bank of the river, viz., Akasheh, Dal, Tinari, and Kajbar, in case of a military expedition proceeding by the river.

General Remarks on the Climate, &c.

The climate from Halfa to Dongola varies but little, as far as I could gather from the natives, from May to September. For a day or two great heat may be experienced, but the normal temperature is, in the shade at noon, from 90° to 100° or 105° Fahr.; going down sometimes to 70° or 75° at night, and that too, shortly after sunset.

The temperature, it is stated, is much lower on the banks when the Nile rises, and I imagine this to be from the northerly breezes common then.

During the last two or three days of May we experienced a clouded sky, with some showers of rain, and we were told that rain occasionally falls at this season.

The extreme dryness of the air is exhilarating, and in a great measure prevents the feeling of exhaustion which generally

accompanies such high temperatures; indeed, one felt the effect of a long journey, 30 or 40 miles, on a camel, often ending in the hottest part of the day, much less than the same amount of exercise in a damper climate.

Organization and Mode of Procedure of an Expedition of 3,500 men of all arms, from Assiut to Dongola, moving by the Nile.

It is assumed that the division of the force would be somewhat as follows:—

Infantry (four battalions)	2,400
Cavalry (one regiment)	400
Mounted Infantry	100
Artillery (one battery)	150
Royal Engineers	80
Machine gun battery (six guns) (the men would also form the crews of steamers)	120
Departments (including two men for each cargo boat)	250
Total	3,500

Horses, Cavalry	420
„ Artillery	150
„ Mounted Infantry... ..	110
„ Royal Engineer Staff and Depart- ments	80
„ Regimental	40
Mules	80
Total	880

In order that such an expedition may be carried out successfully, every arrangement for the transport to Dongola must be made beforehand, i.e., before the force itself leaves Assiut; and all the necessary river transport for the Nile above Sarras and Semneh, should, together with all stores, provisions, coal, forage, ammunition (not actually carried by the men themselves), and the artillery material, have been collected at these places, i.e., taken over the Second or “Great” Cataract, and the Semneh Cataract, before the force leaves Ankash (Wady Halfa).

The necessary native assistance and pilots for getting the steamers and other craft over the cataracts, for piloting them between the cataracts and rapids and over those places, and also for assisting in moving stores, &c., from one point to another, where necessary, must be collected near the Second Cataract before the transport can be moved up, and it should be remembered that food for these people must also be provided, and depôts formed for their supply, at different points on the river between

Wady Halfa and Dongola, for the country bordering the river would be quite unable to feed them.

The *general plan* I would suggest for the movement of such an expedition is as follows :—

The force, of all arms, should start from Assiut to Assuan in barges towed by steamers. At Assuan it would disembark and proceed by rail to Philoe, and there re-embark and proceed to Ankash (Wady Halfa) in the same manner as before, viz., by steamers and barges or diahbiehs (Ankash is four miles north of Wady Halfa and is the northern terminus of the Sudan railway). All the provisions, stores, ammunition, &c., mentioned above, for the use of the expedition after leaving Sarras and Semneh, should have been sent on before to Ankash, and from there by road to Sarras, and by water and land carriage to above the Semneh Cataract (as described hereafter).

At Ankash the force would disembark, and, when ready, proceed by rail to Sarras, the cavalry marching between these places.

From Sarras the cavalry and the portion of the infantry on camels, should proceed by the caravan route to Ambako. At the Semneh Cataract all stores, &c., &c., would have to be disembarked and taken by land (half a mile) past the upper gate of the cataract. At this point, viz., above the Semneh Cataract, all this (the principal portion of the expedition) would collect and ascend by the river, in transports previously provided, to Ambako, and there join the other portion moving by the land route.

The next stage is from Ambako to Okmeh and Akasheh, and for this stage the cavalry and the portion of the infantry on camels would follow the caravan route, the remainder, as before, proceeding by the river, and the whole meeting again at Akasheh.

From Akasheh to the clear water above Dal, would be the next stage to be got over in a similar manner, a concentration again being effected at the latter place.

From this point to Tinari the whole expedition should keep to the river and banks, a portion marching for short distances in the cool of the morning and evening and during the night, and the remainder being towed up. At Tinari, and on to Delko, a separation would again be necessary, the force concentrating once more at the latter place, and advancing by the river and banks to Kajbar.

From Kajbar the cavalry and a portion of the infantry, as before, would cross the desert in one march, and that not a difficult one (about five hours), to the Third Cataract, the remainder moving by the river to the Third Cataract. A final concentration would be effected for the march on Dongola, a distance of about 20 miles, following the river.

By advancing in this manner I see no reason why concentration of the entire force should not be effected every day, if thought necessary, from the time the expedition leaves Sarras and Semneh. The greatest difficulties would probably be experienced in the stages Sarras and Semneh to Ambako, Ambako to Akasheh, and Akasheh to above Dal, and these difficulties would arise principally on account of the bad road the portion of the force moving by land would have to traverse, and the absence of water during the marches from one point on the river to another. To meet them, water should be carried by camels for the use of cavalry and any other portion of the force, advancing by a route away from the river.

Between Hannek and Dongola, the portion of the force advancing by the right bank would have to cross the river, for the town Ordi (New Dongola) is on the left bank. This crossing could well be effected by means of the craft employed in the expedition.

Transport.

It will be necessary to provide *river* transport for the entire force, including all stores, ammunition, &c., from :—

- (1.) Assiut to Assuan.
- (2.) Philœ to Wady Halfa (Ankash).

For at least three quarters of the force, and all stores, artillery, ammunition, &c., from :—

- (3.) Sarras to Semneh.
- (4.) Semneh to Dongola.

Transport for the whole expedition by rail will be required from :—

- (5.) Assuan to Philœ.
- (6.) Ankash to Sarras.

In considering the question of transport it will be most convenient to take the different stages in succession, working down the river, viz.—from Dongola to Semneh and Assiut.

Above the cataract of Semneh should be collected a sufficient number of steamers and cargo boats in which to embark the whole of the expedition, with the exception of the cavalry and the portion of the infantry accompanying the cavalry by land. I have selected the position above the Semneh Cataract for the start being made from, in consequence of the difficulty presented here in ascending the river, making it necessary to disembark all troops, stores, &c., below the upper gate of the cataract, and to re-embark them above it.

This disembarkation would take place on the left bank at a spot not far from the cataract, and everything would have to be

carried on camels or dragged over a distance of about half a mile before it could be re-embarked. There is no road to follow here, and a track of some sort would have to be prepared. I am not quite sure that the left bank would prove to be the best, but it appeared to be likely to be, when I saw the place in May at low Nile. It would make little difference, however, which bank was used, the operation being much the same in either case. This necessity does not occur again between Semneh and Dongola. At Tanjur it is probable that the steamers, cargo boats, &c., may have to be lightened, but not to the extent, or occasioning such a decided break in the advance, as at Semneh. At least six steamers of the size of the "Nasif-el-Kheir" (the patrolling steamer now above the First Cataract) should be placed above the Cataract of Semneh before the force leaves Ankash, together with cargo boats sufficient to take the expedition, stores, &c., on to Dongola.

The number of cargo boats and their size will be dealt with further on in this report.

Between Sarras and Semneh two steamers should be sufficient, together with a certain number of cargo boats. They would convey the troops, stores, &c., by the river in detachments to Semneh, where they would disembark, pass the cataract by land, and then re-embark in the steamers and transports already provided above. A certain number of camels—say 200—must be collected here for the purpose, and food provided for them, observing that if the left bank is used they must be transported across.

The distance from Sarras to Semneh by the river does not exceed 10 or 11 miles, and as the force arrived at the former place, it would be sent on in detachments to Semneh, and there collected for the final advance.

From the above, it is necessary to take at least eight steamers over the Second Cataract to Sarras, and six beyond that place to the Semneh Cataract, and in addition a sufficient number of cargo boats for the transport of the expedition, before the latter leaves Ankash. No boats will be found on the river between the Second Cataract and Semneh, so that all that are required for transport must be taken up the Cataract.

2. *Philæ to Ankash.*

At present there are only two steamers on this part of the river, and one steam launch. There should, in the case of an expedition of the size contemplated, be at least six available for the transport of men and stores, and the patrolling work on the river between these places. Thus it will be necessary to pass 12 steamers up the First Cataract, of which number, six, together with the two at present above it, or eight in all, will

have to ascend the Second Cataract, and be ready for the work above, before the expedition leaves Ankash. I believe that a sufficient number of diahbiehs and cargo boats can be found at present in this part of the river (*i.e.*, Philœ to Ankash) for the transport of the force between Philœ and Ankash, but others would have to be taken over the First and Second Cataracts, in order to provide sufficient transport for the upper part of the river.

1. *Assiut to Assuan.*

I do not anticipate any difficulty in the way of river transport between Assiut and Assuan.

There are plenty of steamers, iron barges, diahbiehs, and cargo boats of all kinds on this part of the river, and it would be easy to collect a sufficient number at Assiut to move the entire force up in one body, were it thought advisable to do so; but I imagine this would not be the case, and that the expedition would be moved up in detachments to Assuan, and from there on to Ankash, concentrating at the latter place before the advance towards Dongola.

RAIL TRANSPORT.

5. *Assuan to Philœ.*

Although, I daresay, some of the boats loaded with stores could be sent over the First Cataract, and so avoid the loss of time and the trouble of disembarking these stores at Assuan, taking them to Philœ by rail, there to be re-embarked again, at the same time all the men composing the expedition would have to go by rail, also the horses, and probably a large amount of stores, &c., and for this reason all the rolling stock on the Assuan-Philœ branch of railway should be placed in thorough order, and proper platforms at each end constructed.

Ankash to Sarras.

Since it is impracticable to take any loaded boats over the Second Cataract, the whole force, with everything pertaining to it, would be disembarked at Ankash, and sent by rail to Sarras.

All the rolling stock on this railway should be collected at Ankash, and put in thorough order, and a sufficient amount of fuel collected.

Dates of Proceeding.

The most important point to be considered in determining the dates of the different operations is the state of the river at

different periods during the next two months. As far as I can gather the Nile will be at its best for the ascent of an expedition from Sarras and Semneh to Dongola, from the middle of August to the middle of September.

I think it may at once be laid down that an expedition should not reach Dongola later than the last of these dates—viz., 15th September or perhaps 20th September. I have no doubt that steamers towing cargo boats, diahbiehs, &c., could ascend from Semneh to Dongola after these dates, but in order to incur the smallest risk and least delay, and to reduce the amount of assistance required from the shore at the different places, the river should be taken at its highest, and it should be remembered that with a falling Nile the difficulties on that account will be experienced earlier, the further an expedition ascends. In the report on Egypt (confidential) prepared by the Intelligence Branch, War Office, 1882, page 158, paragraph 2, it is stated that between 1825 and 1874 the earliest Nile occurred on 27th August, and latest on 20th October at Cairo.

Taking a rough mean, 25th September may be looked upon as the usual date of high Nile at Cairo, and allowing three weeks' difference between Cairo and Dongola, 4th September would be the usual time of high Nile at the latter place.

Fourteen days should be allowed for the ascent from Semneh to Dongola, and six for transporting the force from Ankash to Sarras and above Semneh.

It appears from the above that the expedition should in every respect be ready to leave Ankash on the 26th August by rail to Sarras, and that all transport, stores, &c., should have been collected above Semneh and Sarras by that time.

In order that the necessary river transport as mentioned before (the number of cargo boats, diahbiehs, &c., will be given hereafter) may be ready at Sarras and Semneh, the operation of getting the steamers and other craft over the Second Cataract should, if possible, commence the last week of July or first week of August.

* * *

I estimate that at least 18 days will be required to take eight steamers, and the necessary number of cargo boats and diahbiehs, from below the Second Cataract to Sarras and above Semneh, and this estimate I do not think a too liberal one, considering the unlooked for difficulties, and perhaps accidents, that may have to be encountered. In order, then, that the necessary transport may be at Semneh and Sarras ready by the 1st September, no date later than the 13th August would do for the commencement of its ascent over the Second Cataract.

From Philœ to Ankash the time taken for transporting the expedition would depend very much on the number of detachments it was moved up in, for I do not think it would be con-

sidered necessary to move the whole force together. Supposing one half to be moved at a time, at least 12 days would be required, which would put the date for leaving Philae on 20th August for the second moiety, and 14th August for the first.

The principle difficulty on this part of the river would appear to be in getting the transport intended to be taken over the Second Cataract up in time, for the last boat or steamer intended for this service should leave Philœ not later than the 17th August, and it will all have to be collected below and taken over the First Cataract.

From Assuan to Philæ by rail, I think two or three days might be sufficient, and that would make the date for the first half of the expedition to leave Assuan 11th August, and the second half 17th August.

Allowing six or seven days for the first half to go from Assiut to Assuan, it should start from the former place on the 4th August, or to-day, and the remainder not less than the 11th August, viz., in a week's time.

If a later date than 15th September be considered early enough for the expedition to arrive at Dongola, say 20th September or 25th September, then the same number of days (5 or 10) may, of course, be added to all the other dates for proceedings given above.

Amount of Transport necessary.

The following is an approximate estimate of the weight required to be taken:—

	Tons.
Provisions of 3,500 men, at 4 lb. per man for 45 days, including medical comforts ...	280
Forage for 800 horses for 21 days at 18 lb. } " 80 mules " " " }	150
Ammunition, Infantry	50
Battery of Artillery, with one line of wagons ...	25
Reserve ammunition for Battery of Artillery ...	50
Battery of machine guns, with 5,000 rounds per gun	8
Hospital equipment	56
Camp equipment for half the force	100
Coal	150
Total	869

or say 870 tons.

NOTE.—No estimate is made for fuel for cooking purposes, as it is considered that a sufficient supply can be obtained from the country.

The allowance for 3,500 men for 45 days, at 3 lb. per man, is 215 tons.

Cargo boats of 200 ardebs, 28 tons, are recommended as the most suitable sized craft for passing the cataracts.

Forty of these boats would provide tonnage up to 1,120 tons, and each steamer may be expected to carry 10 tons, besides her bunkers full of coal; five tons of coal as a deck cargo, and a certain number of men. Forty cargo boats and six steamers would, therefore, be able to carry 1,180 tons.

The above estimate of commissariat and ordnance store and hospital requirements amount to 870 tons, and allowing 30 tons to the Royal Engineers for their field equipment and 110 miles of field telegraph, 900 tons of this transport are taken up.

Supposing 50 men to go in each cargo boat, and 100 in each steamer—viz., $50 \times 40 = 2,000$, and $100 \times 6 = 600$ —Total, 2,600; and allowing 10 men to a ton, 1,160 tons of transport are taken up, leaving a margin of 20 tons.

It is assumed that all the horses and mules would go by land.

In making this estimate, I have allowed for 45 days' rations on the army scale, and have not assumed that the country through which the expedition passed, would furnish anything. It would certainly do so, however, above the Third Cataract, and hence this supply of 45 days might be expected to last for a considerable time longer.

Coal I have allowed for to the extent of 25 tons for each steamer, 150 tons to be carried by the cargo boats, and a deck cargo each of 5 tons more, 30 tons in all, and I assume that in addition to this, their bunkers would be filled up before starting from Semneh.

Sunt wood is largely used for fuel above the cataracts, and is a very good substitute for coal, but I believe it is getting scarce, and therefore preparation would have to be made for sending more coal up.

The expedition having started, the steamers between Abkeh and Semneh (two), and cargo-boats should be got over the Semneh Cataract, load up with coal previously placed there, and follow the expedition, thus ensuring a reserve of 300 tons.

Cargo-boats for this service should have sails, and be fitted with awnings fore and aft. With their sails it is to be expected that with the strong northerly winds usual at this period of the year, they would often be able to proceed independently of the steamers. They should have good bollards in the bows and quarters, for securing hawsers and guys to, especially the former; and although the craft of the lower Nile are generally considered too weak for the cataract work and general rough handling they may expect to receive in the upper part of the river, yet if properly prepared, they may be expected to stand one journey up, and their light draught and sail power render

them, otherwise, perhaps the best craft for the purpose that can be obtained.

Any steamers for this work should be thoroughly overhauled, and their hulls, &c., seen to.

Although cargo boats of the above size are recommended, probably it might be convenient to employ some larger and some smaller, and there would be no objection to this, provided extreme limits are not reached in either direction, observing that larger boats are proportionately more difficult to handle and liable to accident, and the employment of smaller ones adds to the total number to be dealt with, and complicates an already sufficiently complicated operation.

The 40 cargo boats mentioned above, would be required above Semneh Cataract. Between Sarras and Semneh, I would suggest 200 tons of transport being provided, besides the two steamers; that would be seven cargo-boats of 28 tons. So that 47 boats of this size, or their equivalent tonnage, must be taken over the Second Cataract in all, and, allowing for the loss of one or two in the process, it would be safer to put the number at 50.

Between Philæ and Ankash, the number of cargo-boats required will depend upon the strength of the detachments ascending, and a sufficient number can, I think, be obtained from the present boats available on this part of the river, it being understood that all cargo boats for use above the Second Cataract should be prepared for the service, and brought up from below Assuan, or the First Cataract.

With regard to camel transport above Sarras, the number of camels required must necessarily depend upon the proportion of the expedition it is determined to send by land. Supposing this number to be 500 Infantry, 400 Cavalry, and 100 Mounted Infantry, then quite 1,000 camels would be required. They should not be loaded beyond 300 lbs. each (at least for the first six days over the bad ground), and their loads might be arranged as follows:—

Five hundred to carry the Infantry (with rations for two days, but depending upon the flotilla for their main source of supply), allowing 200 lbs per man, and also forage (corn) for the whole of the camels, 50 lbs. each, which, with what could be picked up on the way, in the shape of grass and dhura, would suffice for seven days.

The remainder to carry water forage for the horses for one day, and food for the camel drivers for seven days.

For the first six or seven days after leaving Semneh and Sarras, or for the first hundred miles, but little, if any, food or forage for man or beast can be obtained from the country; but after that enough could be got to feed the camels and drivers, and the forage carried by the flotilla would be available for the Cavalry.

It will be seen from the above, that no provision is made for the sustenance of the force until it is ready to start from Sarras and Semneh. It would be necessary to form depôts of provisions and stores at Ankash and Sarras to meet their regiments at these places.

The amount of coal to be taken up to Sarras would be considerable, quite 800 tons, of which about 650 tons would have to be taken past the Semneh Cataract. In another part of this report I have alluded to the provisions it would be necessary to provide for the natives assisting the expedition. A large quantity would be necessary at the Second Cataract, and at Semneh, enough to support quite 4,000 or 5,000 men for the time the craft were being got over the cataracts, and whilst the expedition was being formed; and in addition to this, depôts of provisions for the natives must be formed at different points on the river between Semneh and Hannek—say four places, viz., at Ambako, Tanjur, Dal, and Tinari, and fodder for the camels used in moving stores past the Semneh Cataract, must also be provided.

In forwarding this report, I shall state that it has been drawn up hurriedly, and that I have had no time to revise it as carefully as I could wish to do.

The remarks and opinions expressed in it are founded upon the information I have been able to obtain about the Nile since I was first ordered to procure information with regard to the river and cataracts above Wady Halfa, by the Commander-in-Chief's Memorandum of 1st May, 1884.

(Signed) T. F. HAMMILL,
Commander R.N.

APPENDIX 1.

(See page 62.)

AMENDED SPECIFICATION ON WHICH BOATS WERE BUILT
IN 1884.

Special Rowing Boats for Troop Service on the Nile.

Length	...	...	...	...	ft.	in.	...	ft.	in.
Breadth	...	...	...	...	6	9	...	7	0
Depth	...	...	...	...	2	6	...	2	8

The boats to be clincher-built.

Keel ... { sided, $2\frac{1}{2}$ inches.
 { moulded, $3\frac{1}{2}$ inches.

Stem and post, sided, $1\frac{7}{8}$ inch.

Floors ... { sided, 1 inch.
 { moulded, $\frac{3}{4}$ inch.
 { kilned, 20 in number.
 { grown to shape or solid, four in number.

Futtocks ... { grown to shape of solid, four sided, $\frac{7}{8}$ inch.
 { moulded { lower end, $\frac{3}{4}$ inch.
 { upper end, $\frac{1}{2}$ inch.
 { number, not less than 64.

The floors to extend well above the turn of bilge. If practicable, all should be carried up to the gunwale.

Gunwales } deep, $1\frac{5}{8}$ inch.
 } thick, $1\frac{1}{4}$ inch.

Thwarts, seven in number, 7 inches wide, with two iron knees at each end.

Planks, $\frac{3}{8}$ inch thick; not fewer than 14 on each side. The six strokes out from each side of the keel to be $\frac{1}{2}$ inch thick.

Mast thwarts, two in number, $8\frac{1}{2}$ inches wide at middle tapering to 7 inches at sides of boat.

Keel	} to be of Canada elm.
Gunwales	...	...	...	...
Capping to gunwales	...	...	...	...
Rubbing-pieces	...	...	...	...
Bilge keels (two on each side)	...	...	...	...
spread	...	...	...	...
Floors	...	...	...	...
Futtock	...	...	...	...

Garboard strake	} to be of English or American elm.
Top strake	
Keelson	
Hog-piece	
Risings	
Rudder	} to be of fir.
Planks, of any kind of pine free from knots (except pitch pine), or of Wych elm.	
Stern bench, 12 inches wide, secured with knees; portable seats, backboard, &c., to be of fir.	
Foot-boards, four on each side	
Bow and stern flats	

Skeg band, stem band, and keel band to be of $\frac{1}{2}$ -inch iron, galvanised.

Rowlocks, of galvanised iron, one at each end of each thwart—one at bow and one at stern; each to have a lanyard. Crutch-plates in gunwales may be of iron.

Boat-hooks, two in number, formed with a point and one hook.

Pushing poles, six in number, 15 feet long, fitted with a conical point at one end.

Grapnels, two in number, to have four prongs, and each with 6 fathoms of 3-inch rope.

Rollers, of hard wood, 4 inches diameter, 4 feet long, with an iron hoop at each end.

Oars, to be of ash wood, 12 in number; to be in length:—six, 14 feet; four, 13 feet; two, 12 feet; with copper strip at end of blade, but without leather.

Awings, of light canvas, to be provided in one length, and slit to pass the masts. Two wood poles and hook securities to masts.

Rudder to be fitted complete with yoke. The rudder head to be of sufficient siding to admit of a hole for a tiller being also provided. A spare rudder with appendages to be provided, at the rate of one for every 10 boats.

Rig with light canvas and with a 12-foot hoist of sail; to be provided with the usual tack and sheet hooks, belaying pins, &c. A grummet is to be fitted to keep the sail well home to the mast.

The mast to be long enough to admit of 2 feet more hoist of sail.

All sails are to have two sets of reef points. The boat is to be copper-fastened throughout; to have three coats of paint, the third coat to be of light colour. Each boat is to have its number painted on each bow, and to be provided with a few nails in a canvas waterproof bag fastened under one of the thwarts.

A hole is to be made in the lower part of stem and after part of keel, where shown on the sketch, large enough to take a 3-inch rope.

The work is to be carried out generally in accordance with the foregoing particulars, and all the usual and necessary items of fittings, not here enumerated, are to be carried out without extra charge; and it is to be distinctly understood that the price named for building the boat is to include the entire cost of building and fitting her for the service intended.

The whole of the work is to be done to the satisfaction of Her Majesty's Officers, and a fine of 20s. per boat per diem will be inflicted for every day a boat is delayed in completion beyond the time named in the contract.

The boats are to be delivered at

, free of cost.

APPENDIX 2.

RETURN of Boats, Stores, &c., received at Alexandria and
and 27th October, 1884,

No. of Ship.	Name of Ship.	Transport or Freight.	Departure from England.	Arrival at Alexandria.	Date when Cleared.	Military Officer in charge.
	Steam-ships—		1884	1884	1884	
1	Dunluce ...	T.	Sept. 5	Sept. 20	Sept. 24	Major Martin, R.A. ...
2	Pelican ...	F.	" 10	" 22	" 26	Lord Avonmore, Hants ...
3	President Garfield ...	F.	" 10	" 24	" 28	Lieutenant Pirie, Life Guards ...
4	Magdala ...	F.	" 10	" 26	" 28	Sir G. Arthur, Life Guards ...
5	Bulimba ...	T.	Sept. 17	" 29	Oct. 1	Hon. F. Colborne, Irish Rifles ...
6	Nasanja ...	F.	" 16	" 29	Sept. 30	D.A.C.G. Boyd ...
7	Neptune ...	T.	" 15	" 29	Oct. 2	Major Crofton ...
8	Alenora ...	F.	" 17	" 30	Sept. 30	Major Boyle, K.R. Rifles ...
9	Frutera ...	F.	" 16	" 30	Oct. 2	Maj. Man, Gordon Highlanders ...
10	Aston Hall ...	F.	" 18	Oct. 2	" 6	Lieutenant Orde, Rifle Brigade ...
11	Hidalgo ...	F.	" 19	" 4	" 7	Major Dickson, Roy. Dragoons ...
12	Sheldt ...	T.	" 20	" 4	" 7	847 Camel Corps and drafts ...
13	Favonian ...	F.	" 22	" 4	" 6	800 Camel Corps ...
14	Craigton ...	F.	" 20	" 5	" 8	6 officers, 378 Canadians ...
15	Australia ...	F.	" 26	" 7	" 7	Captain Settle, R.E. ...
16	Deccan ...	F.	" 26	" 7	" 7	Captain Verner, Rifle Brigade ...
17	Ocean King ...	F.	" 15*	" 7	" 8	...
18	St. Louis ...	F.	" 25	" 8	" 9	...
19	Creole ...	T.	" 26	" 8	" 10	...
20	Anglian ...	T.	" 25	" 8	" 11	...
21	Scotsman ...	F.	" 25	" 11	" 12	...
22	Thebes ...	F.	" 23	" 14	" 14	...
23	Horn Head ...	F.	Oct. 3	" 15	" 17	...
24	China ...	F.	" 2	" 17	" 18	...
25	Shelley ...	T.	" †	" 17	" 17	...
26	Crosshill ...	F.	Oct. 3	" 17	" 18	...
27	Osmarli ...	F.	"	" 17	" 18	...
28	Laconia ...	F.	Oct. 3	" 18	" 19	...
29	Cameo ...	T.	" 8	" 21	" 23	...
	Teelin Head	...	...	Arrived following month		
	Nuddia ...	...	...	
	Totals ...	...	...	...	...	...

* Quebec.

Sierra Leone.

(See page 63.)

despatched to Assint, between the 20th September
for Nile Expedition.

Whaler.	Boats.					Tons measurement on board Ships.	Commissariat Stores on each Ship.	
	Gigs.	Raft.	Steam Pin- naces.	Yarrow.	Collapseble.		Cases.	Bags and Sacks.
...	1,031	15,350	850
30	1	...	1,200	6,209	...
56	3	...	...	800	...	...
44
17	500	4,088	...
56	{ 25' 9" } 6	...	...	...
(2 tons blasting gelatine)						900	14,397	2,230
...	236	3,171	...
65
69	...	1	...	...	...	93	...	...
42	310	5,757	71
26	585	1,633	119
...
61
...
...	140	...	...
(2 birch-bark canoe)						...	...	...
30	10	...	...	...	...	230	...	...
33	800	10,791	719
46
5
76	544	3,479	...
48
...
35
18
26
...	1	{ 9' 6" } 6	1,100	...	...
789	10	1		2	12	8,469	64,875	3,98

(S.C.1)

N

APPENDIX 2—*continued.*

Total numbers of Commissariat Stores received.

Stores.	Nile Service.	General Service.	Remarks.
	lbs.	lbs.	
Preserved meat ...	834,593	773,899	
Bacon ...	133,333	33,748	
Cheese ...	52,783	24,607	
Navy biscuit ...	616,000	643,405	
Cabin ...	192,000	10,020	
Flour ...	160,000	180	
Baking powder ...	8,000	...	
Tea ...	64,000	20,014	Among the ordnance stores received may be mentioned—
Sugar ...	192,000	...	
Salt ...	15,200	38,000	
Pepper ...	1,600	400	7-pr. shells.
Compressed vegetables ...	64,000	68,544	Blasting and mining tools.
Jams ...	27,200	...	10,600 lbs. of charcoal.
Lime juice... ..	60,800	8,952	24 ovens.
Pickles ...	20,800	...	2,000 lbs. dynamite.
Rice... ..	32,000	...	1,000 lbs. blasting gelatine.
Oatmeal ...	32,000	...	300 iron camel tanks.
Tobacco ...	32,000	...	480 waterproof bags, to hold 12½ gallons.
Yellow soap ...	21,600	7,700	
Carbolic soap ...	7,200	6,400	
Arrowroot ...	900	...	
Preserved potatoes ...	...	50,000	Between 21st September and 27th October the following railway trucks were sent off—
Coffee ...	...	20,034	
Oats... ..	...	363,000	
Boiled mutton ...	...	384	22 trucks of Yarrow boats.
"Erbawurst," rations ...	345,600	209,520	402 trucks carrying boats.
Cocoa and milk, tins ...	32,000	...	825 trucks of commissariat and ordnance stores.
Vinegar, gallons ...	1,499	...	
Field hospital cases ...	799	...	
Matches, boxes ...	153,600	...	No demurrage was incurred with any of the ships which arrived at Alexandria.
Waterproof bags ...	4,000	...	
Preserved milk, tins ...	...	16,656	
Champagne, bottles ...	...	1,030	
Brandy, bottles ...	...	996	
Tarragona, bottles ...	...	3,008	
Soups, tins ...	...	500	
Rum, gallons ...	...	30,000	
Ale, bottles ...	...	2,000	
Stout ...	...	2,000	
Totals ...	3,106,012	2,334,997	

APPENDIX 3.

(See page 66.)

COLONEL GROVE'S REPORT ON THE WORK DONE AT THE GEMAI DOCKYARD.

Gemai, 6th December, 1884.

"Chief of the Staff,

1. "The time is now near when all the 800 boats sent out for the Nile Expedition, with the exception of some few lost or seriously injured, will have passed through Gemai, and the object for which this large outfitting establishment was instituted will have ceased to exist. Before this takes place it may be well to place on record a few of the leading facts connected with the Gemai dockyard, and briefly to describe the system of work adopted here.

"2. In the end of October, a decision was arrived at to establish a general depôt and repairing station for whalers after they had passed the second cataract and before they started up the Nile with troops on board. The place chosen for this purpose was Gemai, a geographical expression for a mile and a-half of almost straight beach lying just above the second cataract and at the entrance of the long smooth reach which runs from thence to Sarras. This spot which had been selected by Lieutenant-Colonel Alleyne, was singularly well suited for the object for which it was required. The railway from Halfa to Sarras runs for the whole length given above, within from 100 to 200 yards of the Nile, and has here, moreover, a long siding, the only one between Halfa and Sarras. The beach itself is free from rocks, and deepens evenly and gradually. The main stream of the Nile runs along the west bank, and for some distance out from the east bank there is practically no current. The conditions throughout this whole stretch of $1\frac{1}{2}$ miles are so uniform that neither the beach nor the river have changed seriously as the latter has lowered. Neither rocks, mudbanks, nor new eddies have appeared, a fact of much importance to the regular progress of work.

"3. Colonel Butler, C.B., arrived at Gemai on the evening of October 30th and took over the command, I, myself, having reached there on the morning of the same day. From that date work at this place may be said to have regularly commenced. Previous to this Colonel Alleyne's experimental party of six boats had started from Gemai, but no others had

(s.c.1)

N 2

been equipped, nor had any arrangements or system been introduced for the reception, overhauling, and repair of boats, as they came up from the cataracts. All this had to be organised and set going.

"4. The work to be done may be classed under four heads. There was first the absolute repairs of the whalers themselves, the making good of all injury or damage suffered by them on their journey out. Secondly, their fitting out with masts, rigging, oars, and the rest of their necessary gear. Thirdly, the unloading from the railway, and packing in a way ready for immediate issue, of all the many articles known under the name of "Woolwich Equipment" of the boats. By this was meant the tents, cooking utensils, axes, knives, lanterns, grindstones, tool chests, tow ropes, and a large number of other articles, all of which in regulated proportion, had to be furnished to the troops embarking. Lastly, there was the absolute embarkation of troops and their despatch up the river.

"5. The strength with which to deal with this work was at the outset 2* companies South Staffordshire Regiment, under Captain Horsburgh, 16 sappers under Lieutenant Kenny, R.E., 15 blue jackets, under Lieutenant Bourke, R.N., and 10 native labourers, under Conductor Mullen. The staff consisted of Colonel Butler and myself. All these were afterwards reinforced as the boats accumulated. The particulars of the increase are given later.

"6. From October 30th onwards, whalers arrived at Gemai in considerable numbers, and arrangements were at once made for preparing them for troops, and for organising a regular system of examination, repairing, and equipment. An inspection of the boats as they came in, showed that after their long journey by rail, sea, and barge, winding up with the tow from Assuan to Halfa, and the rough transit of the second cataract, their hulls required considerable overhauling. In addition, the gear, *i.e.*, the masts, sails, oars, rowlocks, rudders, &c., &c., all of which had in England been numbered correspondingly to the boats to which they belonged, and sent out with them, had been separated from the boats at Alexandria and conveyed up country independently. All these had in consequence to be sorted, and brought back to their own boats when possible. When this could not be done they had to be refitted.

* Only one company was available. The other was employed in bringing up boats from the Bab-el-Kebir or "Great Gate."

"7. This caused a considerable amount of work, far greater than would be imagined. In dealing with such large masses of gear, some of it, like a mast, for instance, a full burden for one man, the mere transport from one part of the beach to another occasioned much labour. In addition, when it is remembered that every whaler has some 26* articles which do not fit any other boat save those by the same maker, that often the gear of one maker would arrive without his boats, and the boats of another without his gear, that, in fact, it was quite the exception for a boat to come up bringing its own masts, sails, rowlocks, or rudder; it will be evident that a great deal of readjustment and refitting had to be done when dealing with so large a number as 800 boats.

"8. As already stated, the strength at the beginning of November, was :—

2 Companies infantry, about 4 officers and 120 men ; (of these one company was entirely employed in bringing up boats from the cataract, and was unavailable for other purposes).

1 Officer and 16 men, Royal Engineers (11th Company).

1 Officer and 15 men Royal Navy.

1 Conductor and 10 native labourers.

At the end of the first week in November, a party of 120 Dongolese labourers was added, and various small reinforcements, brought the Royal Engineers to 38 men, and the blue jackets to 2 officers and 30 men by the middle of the month. During the last week of November, the whole of the two companies Royal Engineers (the 11th and 26th), were collected together at Gemai, and the strength then was amply sufficient for all purposes.

"9. The staff for the first week was composed of Colonel Butler and myself. Major Dickson, Royal Dragoons, joined about November 7th, and Lieutenant Barttelot, Royal Fusiliers, a day or so afterwards ; Lieutenant Gregson, Derby Regiment, and Captain Selater, R.A., arrived later in the month in

* 2 masts.
2 travellers.
2 sails.
12 row-locks.
1 rudder.
1 yoke.
1 tiller.
3 stern boards.
2 bottom boards.

the order named. The command was held by Colonel Butler from October 30th to November 6th, and again from November 12th to 17th. For the rest of the time, with the exception of one day (the 18th) when Lieutenant-Colonel Alleyne was in camp, it has rested with myself.

"10. The commencement of regular work at Gemai took place during the last days of October. On the morning of November 1st, a party of Major Dorward's company, Royal Engineers, was embarked in five boats and sent on under Lieutenant Lawson. These were the first troops that proceeded up the Nile in whalers. On the 5th November, the right wing South Staffordshire left in 31 whalers, and on the 6th, the left wing and headquarters, accompanied by Colonel Butler, started in 34 boats. From that time the embarkations have continued as required, and in no case has the departure of troops been delayed in consequence of whalers not being ready to convey them. There has always been a considerable reserve in hand to meet any sudden call.

"11. The following is a general sketch of the system which, after various trials and changes, was found to work the most satisfactorily. The beach was divided into three portions—a painting slip about half-a-mile in length at the lower end where the ground happened to be particularly well suited for hauling boats on shore—a receiving place (marked out by two flags, which the native boatmen who brought up boats from the cataract could see from a distance) whither all boats were brought on arrival—and a "carpenters' beach" opposite to the railway siding. The whalers as they came in were brought to the receiving beach, where all the gear was taken out of them, placed inshore, and sorted and stacked by infantry fatigue parties. They were then taken down to the painting slip, hauled up on shore and turned over. A thorough examination was then made of their hulls, fresh planking put in when necessary, cracks filled in, and finally a good coat of paint given all over outside. The boat was then brought up to the carpenters beach, where rudders and masts were fitted; all internal repairs (such as those to thwarts and bottom boards) carried out, and, lastly, the blue jackets fitted her out with sails, oars, and poles, and the remainder of her gear. She then lay opposite the railway siding ready to receive the Woolwich equipment and troops.

"12. The sappers and the blue jackets were organised in gangs, each of which was kept to its own special work. The infantry detachment was frequently relieved during the

month of November, and, on the arrival of a fresh company, the officer commanding was asked to pick out those men who knew anything about carpentering, painting, or smith's work. Any that did were kept permanently employed under the Royal Engineers or the sailors. Similarly those that could row formed permanent boat parties as long as the detachment remained. The others were utilised as fatigue parties to sort gear and unload boats or railway trucks.*

"13. The whalers with very few exceptions came up by water, but the whole of the Woolwich equipment came by rail. It was packed ready for issue between the siding and the beach. Those boats which came up by train were taken off the trucks, and man-hauled down a cut slope into the river, without difficulty or damage of any sort.

"14. The embarkations were conducted as follows:—

"On the arrival of a company to be embarked, the officer commanding was requested to break it up into squads of eight men, that being the number of a boat's crew. Two men from each crew were then taken out, and the rest of the company allowed to fall out. One man per crew was then placed in each boat, and the list of articles that should be in her, read out by myself or some other staff officer. These were checked by the men under the superintendence of one of their own officers, and when found correct the boats were handed over. A similar process went on with regard to the Woolwich equipment. When this was completed the company entered the boats and stowed away its ammunition, rifles, valises, &c., and eventually the boats were started by myself, and invariably one by one, with a fair interval between. This last precaution I found most necessary, otherwise, in the eagerness of the men to be off, collisions and fouling would certainly have ensued. I found it very difficult to make not only soldiers but also officers realise that, with the long water journey before them, a start of a few minutes more or less was a matter of comparative unimportance.†

"15. The embarkations were carried on concurrently with

* I should add that the Canadians were collected in one large camp at Gemai about 12th November. Nine of them, of their own accord, offered to assist in boat mending till wanted as voyageurs, and their offer was gladly accepted. They were the best boat carpenters I had, and their conduct was perfect.

† The anxiety of officers to get forward had frequently caused inconvenience, particularly by causing them on several occasions to leave Cairo before the equipment of their troops was completed, and instructions had to be given to General Grenfell to send back to Cairo to complete, officers arriving at Assuan without full equipment for the troops under their command.

the ordinary work. Four blue jackets were employed to push off the boats, and two or three carpenters kept at hand to put right any small thing found wanting at the last moment, otherwise the regular gangs and fatigue parties were not interfered with.

"16. The hours of work were as follows :—

6 a.m. to 7.30 a.m.	{ changed as the days shortened from 6.15 to 7.45.
9 a.m. to 12.30 p.m.	
2 p.m. to 5 p.m.	

Making a total of eight hours a day. More, I think, could hardly have been exacted from men in this climate. As it was they were, I think, pretty well tired by the evening. The camp was remarkably quiet after 9 p.m.

"17. With a few general observations I shall conclude. The boats, as might be expected, varied considerably in quality. . . .

"18. On the whole the whalers have stood the journey to Gemai well, their great enemy has been the excessive dryness of the climate. This has not only caused their seams to open, but has also rendered the planks out of the water very brittle and liable to crack. Even after the boats have been thoroughly overhauled and painted it is most difficult to keep the planks above water watertight. The result is that directly a load is put in the boat leaks. This defect is only temporary, as in a few days the planks swell and close up, but it causes much inconvenience to the crews at first. I have tried many expedients to cure it, but I fear with only moderate success.

"19. The last boat left England on 3rd October, and by the 10th December the last will be ready to leave Gemai. The whalers will, therefore, have accomplished their journey of some 4,000 miles, and had their overhauling, repairing, and equipping completed in two months and a week. Neglecting Colonel Alleyne's six boats, work at Gemai may be said to have fairly begun on 30th October; it should end on 9th December. Broadly speaking, therefore, the 800 boats will have been turned out in 40 days, or at the rate of 20 per day (Sundays included). Had it been necessary this rate could have been increased.*

"20. The work has occasionally had to be carried on under difficulties, owing sometimes to paucity of officers or hands, sometimes to the non-arrival of some much required

* * It was not necessary, as the boats were turned out faster than the troops arrived.

material, such as paint, copper nails, or articles of boat gear. Within the last few days, for instance, it has been necessary to start a sailmakers' tent and make sails here, in addition to the work already enumerated, as a large number of boats' sails appear to have gone astray somewhere. Similar wants have had to be met before, by the best methods that could be extemporised. The difficulties, however, have never been so great as seriously to impede the progress of work or to prevent boats being forthcoming when required.

"21. That this has been so is in a great measure due to the excellent way in which all the officers have worked whom I have had the good fortune to have under me here. Without this matters would more than once have been brought to a standstill.

"(Signed) C. GROVE, Lieutenant-Colonel, A.A.G."

APPENDIX 4.

(See page 66.)

REPORT ON CANADIAN VOYAGEURS.

1. When an expedition up the Nile for the relief of Gordon was decided on, it was determined to engage about 400 Canadian voyageurs to assist in navigating the whalers taking up the troops. Lord Melgund, Military Secretary to H.E. the Governor of the Dominion, was asked to carry out the requisite arrangements for this purpose in Canada. The first voyageur was engaged on September 1st, 1884, and in twelve days afterwards 7 officers, 18 foremen, and 362 men had agreed to serve. The 380 foremen and men consisted of 36 English and Scotch, 158 Canadians, 93 French Canadians, 77 Indians, and 16 other nationalities.

2. The following are the names of the officers and foremen :—

Officers (7).

Lieut.-Colonel H. Denison, Commanding.

Captain T. Aumond, Staff Captain.

" A Macrae, "

" E. A. Denison, "

Surgeon-Major Neilson,

Lieut.-Colonel W. N. Kennedy, Paymaster.

Abbé A. Bouchard, R. C. Chaplain.

Foremen (18).

S. G. Remington, Acting	Moïse Godin.
Quartermaster.	J. E. Kennedy.
Andrew Campbell.	D. G. McLekan.
Horace Gardiner.	M. McKeand.
Fabien Larocque.	Louis Jackson.
James Grahame.	Francis Delisle.
William Douglas.	William Prince (Chief).
Alexander McLaurin.	M. Morrison.
W. H. Anderson.	T. Mercier (Sub-Foreman).
Alexandre de Coteau.	

3. The voyageurs left Quebec on September 15th and reached Alexandria on October 7th. From thence they proceeded to Halfa where they arrived on October 26th.

4. With the exception of a small party of Caughnawaga Indians who made an experimental trip to Dal under Colonel Alleyne, A.A.G., and a few more employed by Colonel Butler, A.A.G., the whole of the voyageurs were at once sent on from Halfa to the Bab el Kebir, in the second cataract, where they camped, under command of Lord C. Beresford, R.N. Their employment at first was to assist in getting the whalers through the second cataract, and specially to bring them on after they had passed the Bab, to the outfitting yard at Gemai.

5. Early in November, and soon after the embarkation of troops at Gemai had begun, the voyageurs were moved from the Bab to the latter place. As the troops embarked they were placed in charge of boats, one to each boat, until eventually the whole had left Gemai with the exception of a few who remained to help in the work of fitting out the boats. These last were most willing and excellent workmen, and were of most material assistance. In fact they taught the working parties at Gemai how to set about boat mending, as distinguished from ordinary carpentering.

6. The first arrangement adopted was for the voyageurs to go with their boats, one to each as already stated, as far as Sarkamatto, *i.e.*, the upper end of the Dal Cataract. Above this place the number of voyageurs was reduced to one per five boats, as it was supposed that the soldier crews had by this time gained sufficient experience to be able to manage for themselves to a great extent. The remainder of the voyageurs returned to Gemai to take up fresh boats.

7. Under this arrangement delay resulted from the troops at Gemai, when otherwise ready to start, having to wait till voyageurs returned from Sarkamatto. It was, therefore, exchanged before long for another which may be called the "fixed station" system as against the first or "trip" system.

Instead of working up and down the whole length of the river from Gemai to Sarkamatto, between 80 and 90 miles,* the voyageurs were established in fixed camps at the points where bad water existed. Here they remained permanently, taking the boats through as they came up. In the easy reaches between the cataracts only a few went with the boats—one or two to every ten boats—to act rather as guides than absolutely to navigate.

8. The second system was found to have great advantages over the first. It greatly economised the skilled labour of the Canadians by using them only where they were specially wanted, with the result that at the bad places, it was always possible to put two, and frequently more, voyageurs in each boat. It saved the delay which had previously occurred, since each day's labour was productive, if such a word may be used. Under the first arrangement, during the time the voyageurs were coming down from Sarkamatto to Gemai (from 2 to 3 days each trip) their labour was lost to the expedition. The second system was greatly preferred by the men themselves, as they were far more comfortable in fixed camps and with regular hours of work, than when perpetually on the move and never sleeping two nights in the same place. And last, and most important, was the result that the voyageurs knew the cataracts much better, and that their knowledge kept pace with the changes in the water produced by the fall of the Nile. These changes were so rapid and considerable, that the whole aspect of a cataract would alter in a week. Under the trip system, a voyageur's previous experience of a cataract was of no use to him when he got back to the same place on the next trip. In the intervening fortnight, or three weeks, the water and the channels had completely changed. Under the fixed station system his knowledge of a cataract increased every day.

9. This last system was adhered to the end, with the exception of those men who accompanied General Brackenbury's column, and who of necessity had to move on with the boats.

10. When it was perceived that the operations would last longer than was at first anticipated, the best of the voyageurs were invited to re-engage for a further period of six months. Six foremen and eighty-three men did so, and two officers, Lieutenant-Colonels Denison and Kennedy, remained in Egypt with them. All these went up the river with General Brackenbury's column, and did most invaluable work under Lieut.-Colonel Alleyne, A.A.G. At the conclusion of the operations they returned to Canada, passing through London on their way. Those who had not re-engaged left the Upper Nile early in

* Gemai-Sarras 17, Semneh 11, Ambako 19, Tanjur 12, Akasheh 10, Dal 11, Sarkamatto 5, total 85.

January, 1885, and arrived in Canada, before the expiration of their engagement, on March 6th.

11. Six voyageurs were drowned, namely,—

Louis Capitaine,
G. Fletcher,
John Moris,
John Faulkner,
William Doyle,
Leon Chattelin,

and many others had very narrow escapes. Nine men* died from other causes. One officer, Lieut.-Colonel Kennedy, died of small-pox after reaching London on his return journey.

12. Out of the 362 voyageurs about 45 were unsuited for the work. The remainder varied—as might be expected—in their skill and capacity, but they were all able to take charge of a boat. They knew little about sailing, to which they were evidently not accustomed; but for rowing, tracking, or poling a boat in bad water, and for its general management except under sail, they were experienced and capable. They were exceedingly well-behaved, hardy, and uncomplaining, and they never shirked work. Their manner was rough, and they were not disposed to take orders from anyone whose position they did not know. But when they understood that the officer—whoever he might be—had the right to give orders, they obeyed very willingly.

13. Speaking generally, it may be said that the employment of the voyageurs was a most pronounced success. Without them it is to be doubted whether the boats would have got up at all, and it may be taken as certain that if they had, they would have been far longer in doing so, and the loss of life would have been much greater than has been the case. There was, I imagine, no one connected in any way with the working of the whalers up the river, who did not feel that had double the number of voyageurs been available, work could have been found for them all, and the progress of the expedition would have been materially benefited thereby.

C. GROVE, *Lieut.-Colonel.*

Cairo, 19.6.85.

* One died on passage from Canada to England, who is included in above nine.

APPENDIX 5. (See page 70.)

LIST of Stations, Commandants, &c., on Line of Communications.

Stations.	Commandants.	Hospital Arrangements.	Commissariat Department.	Wood Depot.	Postal Stations.	Telegraph Stations.
Cairo ..	Lieut.-Col. J. C. Ardagh, C.B. ..	Gen. Hospital	Yes	Yes	Yes	Yes
Assiut ..	Lieut.-Col. F. T. Lloyd, R.A. ..	..	..	..	Yes	Yes
Assuan ..	Brig.-Gen. F. Grenfell ..	Hospital	Yes	Yes	Yes	Yes
Koroko ..	O. C. troops ..	..	*	..	Yes	Yes
Wady Halfa	Lieut.-Col. and Col. F. Duncan, E.A. ..	Hospital	Yes	Yes	Yes	Yes
Sarras ..	Lieut.-Col. Gordon ..	Hospital	Yes	Yes	Yes	Yes
Senneh ..	Major and Lieut.-Col. A. S. Wynne, E.A. ..	Rest Camp	*	Yes	Yes	Heliograph
Ambako ..	Lieut. and Major H. Hulett, E.A. ..	Rest Camp	+	Yes	Yes	Heliograph
Tanjur ..	Captain and Major G. E. Lloyd, E.A. ..	Rest Camp	+	Yes	Yes	Heliograph
Akashah ..	Lieut. and Captain H. A. Coles, E.A. ..	..	+	Yes	Yes	Yes
Sarkamatto	Major and Lieut.-Col. Trotter, E.A. ..	Hospital	Yes	Yes	Yes	Yes
Amara ..	.. ..	Rest Camp	..	..	..	..
Absarat ..	Captain and Major B. D. A. Donne, E.A. ..	..	+	Yes	Yes	..
Kajbar ..	Lieut. and Captain Eager, E.A. ..	Rest Camp	*	Yes	Yes	Yes
Abu Fatmeh	Lieut.-Col. J. F. Maurice, A.A.G. ..	Hospital	Yes	Yes	Yes	Yes
Dongola ..	O. C. troops ..	Hospital	Yes	Yes	Yes	Yes

* Reserve rations in case of urgent necessity.

† Forage for camels.

APPENDIX 6. (See page 72.)

SCHEME for the Distribution of Nuggers and Broad Arrow Boats* between Senneh and Merowi.

Name of Reach.	Number of cables placed at each station.	Interval in miles.	Time for double journey up and down in days.	Date when boats can no longer be handled over cataraets.	Boats.			Amount in tons weekly up stream.†	Length of portage in miles.	Camels required to shift daily tonnage brought up by boats.‡	Porters for ditto if troops are not available.	
					Numbers.	Class.	Tonnage. Separate tons. Total tons.					
Senneh ...	4			30 10 84	8	Small broad arrow boats ...	16	74	1			Add whaler at 2 tons each. Lieutenant Tyler's steam launch. Lieutenant Montgomery's steam launch.
					2	Nuggers ...	16			8	14	
					10	Small broad arrow boats ...	20	70	1½			
Ambako ...	2	14	3	30 10 84	10	Small broad arrow boats ...	20	84	2½	18	18	
					2	Nuggers ...	16					
					2	Small broad arrow boats ...	5	100	3½	24	24	
Tanjur ...	2	6	2	30 10 84	19	Nuggers ...	152					
					2	Small broad arrow boats ...	6	109	½	7	14	
					9	Nuggers ...	72					
Dal (Sarkamatto) ...	2	23	3	30 10 84	16	Large broad arrow boats ...	238					
					200	Hamoullas ...	300	260	3	24	24	
					16	Nuggers ...	144			81	94	
Kajbar ...	2	83	14	30 10 84								
Hannek ...	3	30	5	20 1 85								
Merowi ...	...	220	20	No cataraets.								

* Native craft brought from below the Second Cataract were designated broad arrow boats.
† It is assumed that 6 camels carry one ton in short stages from 20 to 24 miles, half journey being "returns" unloaded.
‡ Average 87½ tons as far as Hannek.

APPENDIX 7.

(See page 72.)

LIST AND POSITIONS OF STEAMERS ON THE NILE,
20TH SEPTEMBER, 1884.

Names.	Horse-power.	Draft when loaded.	Number of officers and men can carry.	How employed.
I.				
Messir ...	60	ft. in. 5 6	8 officers, 80 to 100 men	Between First and Second Cataracts.
Tersaat ...	60	4 5	80 to 100 men	Below First Cataract.
Fayoum...	80	5 6	11 officers, 40 men, without officers 80 men	ditto
Beherah...	80	5 6	12 officers, 170 men	ditto
Garbich ...	80	5 6	Sister ship Fayoum	ditto
Mchallieh ...	70	4 5	30 officers, 150 men	Between the First and Second Cataracts.
Kench ...	150	6 7	190 to 220 men	Below First Cataract.
Masr ...	150	7 8	63 1st class, 150 men	Under repair, will be ready in ten days.
Gay-Farag ...	150	5 6½	No cabins, 250 men	Below First Cataract.
Massudieh ...	150	7 8	Same as Kench	ditto
II.				
Azazieh ...	...	...	...	Armed steamers between First and Second Cataracts. To ascend Second Cataract.
Glzeh ...	40	4 5	150	
Mahmudieh ...	40	4 5	125	
Saidieh ...	40	4 5	150	
Nasif-el-Kheir ...	40	4 5	150	
III.				
Nil ...	40	4 5	24 officers, 100 men	Over First Cataract.
Beni Suef ...	40	4 5	No officers, 70 men	Ditto, and selected to ascend Second Cataract.
Gabare ...	40	Tug	Nil	Below First Cataract.
Talka ...	40	Tug	Nil	
IV.				
No. 4 ...	30	...	32 beds	Used as an hospital ship, engines useless, at Assuan.
Boulac ...	40	...	16 1st class, 17 2nd class, room for 80 men	Below First Cataract.
No. 7 ...	60	...	Same as No. 4	Used as an hospital ship, engines useless at Assuan.
V.				
Farouz ...	100	}	... ..	Below First Cataract.
Tentel Baharen	80			
Yaya ...	80			

List of Steamers on the Nile—*continued*.

Names.	Horse-power.	Draft when loaded.	Number of officers and men can carry.	How employed.
VI (small).		ft. in.		
Massudieh ...	25	}	... ..	Below First Cataract. Postal service, each can take 6 officers, 10 non-commissioned officers, and about 20 men, with very little baggage. Saibair can take 12 officers, 14 non-commissioned officers, 40 men, 5 tons baggage.
Baadieh ...	...		
VII.				
Sudan ...	60	4 5	Same as Messir	Below First Cataract.
Tantah ...	120	...	6 officers, 200 men	ditto
Damietta ...	...	...	... ..
Fuah ...	...	...	... ..	ditto

PUBLIC WORKS DEPARTMENT.

Menshieh ...	60	}	{	NOTE.—One good steamer, in addition, is going up to Assiut; 12 sailing boats, with a total capacity of 3,000 ardebs, or about 500 tons, are waiting at Assiut for employment.
Saubrihit ...	60				
Jaffa ...	40				
Massartika ...	40				

In addition, a large number of barges, 15 or 16, were at Assiut ready for use. Each barge could carry about 200 men.

APPENDIX 8.
(See page 73.)

SCHEME FOR WHALER CONVOYS.

Name of Reach.	Boats.		Time for double journey up and down in days.	Interval in miles.	Amount in tons carried weekly up stream.	Length of portage in miles.	Camels required to shift daily tonnage brought up by boats.	Number of daily double trips.	Porters required to shift daily tonnage brought up by boats, if troops are not available.	Remarks.
	Number.	Tonnage.								
Sarras	6	12	2	9	42	1	5	15	10	After the railway is brought south of Senneh, the 7 boats detailed for Sarras will be detailed as may seem best in connection with the scheme for nuggers and broad arrow boats.
Senneh	10	20	3	15	46	1	11	6	22	
Ambako	6	12	2	8	42	1	5	8	10	
Tanjur	10	20	3	23	46	1	32	2	64	
Dal	42	84	13	83	45	1	5	15	10	
Kajbar	16	32	5	30	45	1	28	21	56	
Hannek	..	..	..	..	..	3	..	..	..
	90	180			Average 44.5					

These boats were to have crews as follows:—
 30 boats Dongolose.
 30 boats Egyptian soldiers.
 30 boats Kroomen.

1 voyageur to each boat.
 1 officer, if possible, to each 15 boats.

APPENDIX 9. (See page 73.)

SCHEME for Transfer of 30 Sick daily from Abu Fatmeh to Railroad.

Name of stopping place.	Clear distance in miles below places, by water.	Length of portage in miles.	Description of portage.	Number of boats.	Number of				Remarks.
					Porters.	Donkeys or mules, with caretakers.		Tents.	
						Men.	Animals.		
Senneh ..	14	1	Fair	20	5	5	Each two double Sepoy pal, 1 Lascar, 1 mountain.	It is assumed that one-third of the sick will require to be carried on stretchers, and that the remainder can ride or walk at the short portages. Four bearers are allowed for the carriage of each sick man on a stretcher; two for each stretcher with stores—a reduction is made at short portages. (a) A filter and means for cooking to be in each boat as part of the boat equipment. (b) Senior Medical Officer, Hannek, to see that the boats are perfectly equipped, before starting, with buckets for drawing water, cooking utensils, stretchers, blankets, bed pans, &c., to ensure which stores for three convoys should be accumulated at Hannek in the first instance.	
Ambako ..	..	1½	Rough	80	14	14		
Tanjur (left bank)	8	2½	Heavy and sandy	80	16	16			
Dal ..	22	5½	Fairly good	80	24	24			
Amam*	20	4	Good and flat	40	10	10	Five double Sepoy pal, 3 Lascar, 3 mountain.		
Kajbar ..	60	1	Ditto	20	5	5			
Abu Fatmeh	..	..	Flat and easy	80	20	20	
	154	12½		400	94	94			

* If boats pass this catract the camel transport will not be required.

APPENDIX 10.

(See page 76.)

TABLE SHOWING STORES CARRIED BY THE SUDAN RAILWAY FOR DEPARTMENTS.

Month.	Commissariat.	Ordnance.	Whaler Supplies.	Egyptian.	Railway.	Various.	Total.
	tons.	tons.	tons.	tons.	tons.	tons.	tons.
October ..	324	10	92	236	53	321	1,036
November ..	590	15	1,584	17	25	422	2,653
December ..	1,036	55	670	267	690	1,271	3,989
January ..	666	65	..	385	1,078	817	3,011
February ..	310	105	..	287	1,795	185	2,682
March ..	533	165	..	305	1,002	906	2,911
April ..	1,500	155	..	525	1,492	1,162	4,834
May ..	938	45	..	362	1,450	936	3,731
June ..	202	55	..	225	3,289	957	4,728
July ..	1,101	494	..	87	6,982	1,132	9,796
Total ..	7,200	1,164	2,346	2,696	17,856	8,109	39,371

APPENDIX 11.

(See page 76.)

EXTRACTS FROM THE REPORT BY THE DIRECTOR OF TRANSPORT ON THE FORMATION AND WORKING OF THE LAND TRANSPORT OF THE NILE EXPEDITIONARY FORCE, 1884-85.

Purchase of Camels.

In the early part of the month of August, 1884, the Political Resident at Aden was requested by the General Officer Commanding the Forces in Egypt to purchase 100 baggage and 200 riding camels at Aden for employment in the Khartum Relief Expedition. These animals were to be shipped to Kosseir on the Red Sea with 500 drivers, and from thence were to march across the desert to Kench, on the Nile (about 120 miles).

The Aden camels and drivers arrived in three steamers, the "Eldorado" carrying 110 camels, the "Abyssinia" 100, and the "Navarino" 90. These were met on arrival at Kosseir by Lieutenant Barttelot, Royal Fusiliers, and conducted eith to Kench or to Assuan* with the loss of one camel, which w unable to continue the journey through sickness. . . .

* Only the party landed from the "Navarino," marched direct from Kosseir to Assuan to save time.

Two companies of the Commissariat and Transport Corps, Nos. 9 and 11, left England in the s.s. "Goorkha" on the 27th August, 1884, and arrived in Cairo from Alexandria on the 8th September. After a stay of a few days in the capital to complete their equipment, these companies left for Assiut by rail on the 13th September, there to embark for Assuan. The establishment of each company is shown in the following table, and was proposed by the Commissary General in London :—

Detail.	Commissariat and Transport Corps.										Natives.			Animals.				
	Captain.	Officers attached.	Quartermaster.	Conductors.	Staff-Sergeants.	Sergeants.	Corporals.	Artificers.	Rank and File.	Buglers.	Privates.	Artificers.	Superintendents and Interpreters.	Drivers.	Riding.	Pack.	Spare.	Total.
One Section ...	...	...	...	1	...	1	1	...	1*	...	10	1	2	80	3	150	...	153
One Division ...	...	1	...	2	...	2	2	...	2*	...	20	2	4	160	6	300	...	306
Two Divisions ...	...	2	...	4	...	4	4	...	4*	...	40	4	8	320	12	600	...	612
Headquarters of Company ...	1	...	1	...	2	1	1	1†	1†	1	8	...	1	4	6	4	...	10
Total ...	1	2	1	4	2	5	5	1	5	1	43	4	9	324	13	604	...	622

* Saddlers.

† Shoeing Smith.

‡ Farrier Sergeant.

§ Eventually only one driver for each 3 camels was allowed.

On the 15th September, the Sirdar (Sir E. Wood), was informed that Lord Wolseley had authorised the purchase of 1,200 camels for the two companies of the Commissariat and Transport Corps.

Captain Hallewell, D.A.C.G., had, at this period, already purchased at Esneh 29 camels and 107 dromedaries, the latter being intended for mounting the Mounted Infantry; whilst Lieutenant Du Boulay, R.A., had acquired at Minyeh 115 camels for the 1/ Southern Division Royal Artillery, but the increasing number of camels required, necessitated the despatch of purchasing agents to all the likely markets on both banks of the Nile from Assiut to Wady Halfa to purchase dromedaries and camels, both for the Transport Companies and for the camel regiments, which the General at this period intended to raise.

In speaking of camels, the names of dromedary and camel were used to distinguish the riding from the baggage animal, the distinction was, however, purely arbitrary, and used for convenience so as not to confuse the two; both animals are, however, camels, for dromedaries are not indigenous to Egypt.

At Assiut, about 589 powerful baggage camels were purchased under the direction of the officers commanding the station (Lieutenant-Colonel Maurice and Colonel Primrose). In this market, few of the riding species are to be found, it is only further south that the animal is extensively used for riding purposes; even there, the same camel is often put to the double purpose of carrying a rider or a load, just as circumstances may demand.

Keneh and Dishna supplied a large number of useful and well selected animals. It is well worth remarking that when early in September an officer of the Commissariat then at Keneh was asked by telegraph to make enquiries as to the prospects of obtaining camels for either riding or baggage purposes in that locality, he replied that there appeared no prospects whatever of obtaining any there, notwithstanding which, Captain Ali Haider, an officer of the Egyptian Army, purchased there and at Dishna over 600 camels for the N.E.F., and most of a very good stamp. This fact speaks well for the energy displayed by this purchasing officer.

A selection was made of the camels in commissariat charge in Cairo, and 200 which appeared fit for work were despatched to Assuan, principally in charge of Major Collings, 1/ Berkshire Regiment. The following purchases were likewise made in the neighbourhood of the capital:—

Captain Childers, A.D.C., purchased 45 at Beni Suef.

Major Creagh, A.D.C., purchased 105 at Ghizeh.

Veterinary Surgeon Phillips purchased 69 at Ghizeh.

An idea, however, seemed to prevail that the Delta camels

were unfitted to stand the climate of Upper Egypt and the Sudan, hence few were obtained from the Delta. The 45 purchased at Beni Suef, however, turned out the best of all the camels we employed during the campaign, those from Assiut and Minyeh were about as good.

The principal purchases were effected by purchasing officers delegated by Brigadier-General Grenfell, the returns showing that, at the time the purchasing ceased, the animals acquired by these officers amounted to 2,381, obtained from the following sources:—

Sohag, 621.	Edfu, 468.
Assuan, 200.	Luxor, 106.
Esneh, 232.	Derau, 120.
Keneh and Dishna, 644.	

Colonel Colville and Major Kitchener, who were at Dongola or in the neighbourhood at this time, were asked to purchase a small number of riding camels for the Mounted Infantry, the former having been directed to inquire as to the total number of camels that could be obtained about Dongola by either purchase or hire by the middle of November.

The purchases were made by the officers deputed by Brigadier-General Grenfell, though the largest do not represent all the animals purchased in the district between Assiut and Assuan, for other purchases were made in this district by sub-agents sent by the General of Communications. These sub-agents, by the offer of a higher price than Brigadier-General Grenfell's officers were authorized to give, secured a certain amount of camels, but at the same time had the effect of introducing a rise in the prices all round, whilst we were endeavouring to keep the prices down.

The question of price was a difficult one to arrange; dealing with Arabs it was prudent at first to keep the prices down carefully, otherwise the same prices as would have later on to be offered when the market became exhausted, would have been demanded from the very first for an inferior lot, and we would have been compelled to advance to still higher prices later on when something better than mediocre animals might be required.

After the arrival of the Camel Regiments at Assuan the difficulty of obtaining animals of sufficient size to mount heavy men, caused an offer to be made of 16*l.* a piece for 100 riding camels of a superior stamp. This offer got rapidly bruited abroad, and the same amount was at once asked for under-aged and undersized animals. Even the bait of an advanced price, paid for some few mediocre camels at Assuan, had little effect, the following day the animals submitted for sale being smaller and younger than those previously offered. The same animals being brought forward for sale time after time, was a very frequent occurrence.

The people evidently did not like to part with their best riding camels, those offered for sale at Assuan whilst the camel regiments were being mounted, were generally small and too young for work, and though the dealers were repeatedly told that we needed stronger and more mature animals, for which we were prepared to give a good price, very few of this stamp were brought in.

In pointing out a camel of good size to a dealer and explaining to him that our heavy men and heavy kit needed camels of that stamp, the Arab stated that the light-coloured Bisharin camel seldom attained the same proportions, but that darker camels used only for baggage purposes, of that size and make, could be obtained in any number.

To start the purchases in some instances very young camels had to be taken, others of immature age were obtained in purchasing an entire lot, rather than lose many desirable animals. Many of the young ones were soon sold, being to all appearance unfit to stand the hard work of a campaign.

A large number of the camels purchased for the camel regiments at first were doubtlessly very light, but the majority of the riding camels in the country are of this stamp. The pure Bisharin, though he may be a very hardy animal, is of no great size, nothing to compare with the Mulaid, which is evidently a cross between the Bisharin and the heavier lower country camel; apparently the Mulaid is very much prized, therefore not easily parted with.

A number of camels received into the dépôt at Assuan bore marks of former sores on the loins and back; the old wounds had been superficially treated and cauterized, and, though to all intents and purposes they appeared sound, a march under a heavy load soon found out the weak point and caused the wound to reopen. Many camels on arrival at the remount dépôts were found to have been overmarched, and as a general rule convoys of camels purchased in far off markets and entrusted to native headmen or agents to look after them *en route*, arrived in poor condition, not having been sufficiently fed on the way.

The sick animals on arrival at Assuan were all taken in hand by Veterinary Surgeon Bennett, who was unremitting in his attentions to them, still it was unfortunate that before any real work had begun, the sick list contained a considerable number of animals incapacitated for immediate work. With good treatment and care most animals picked up condition so much so that it was found practicable to send off on the 17th November, a convoy of 85 convalescent camels which were expected to improve on the road and arrive at Wady Halfa quite fit for work.

The camels which showed worst on arrival at Assuan were

the 150 baggage camels sent from Cairo under Major Collings, 1/ Berkshire Regiment. These animals had suffered severe privations in the Suakin operations in the spring, and the long march from Cairo to Assuan debilitated them to such an extent that on arrival at the latter place it was found impossible to utilise them for field work; the worst of these had to be disposed of by sale, the rest being detailed for purely local work.

The annexed statement shows the total number of animals purchased for the N.E.F., the extent of the purchases in each district, and the average price paid.

Purchasing district.	Purchaser.	Total number purchased.	Total cost.			Average cost.		
Aden ...	Political Resident ...	300	£	s.	d.	£	s.	d.
Cairo ...	Various officers ...	215	3085	17	1	10	5	9
Assiut, 1884...	"	589	2861	10	0	13	6	2
" 1885...	Lieut.-Col. Lloyd, Commandant	21	7917	1	10	13	8	10
Assuan	Capt. Hallowell, 1884, for Comdt.	147	308	10	0	14	13	10
"	Gen. Grenfell's agents for exped.	2401	1565	15	4	10	13	0
"	" for reserve	101	27876	7	2	11	8	0
"	Col. Henderson's agents, 1885, for line of communication	1344	1461	13	9	14	9	5
Wady Halfa	Vet. Surg. Queripel, for ditto	119	21998	18	5	16	7	4
"	Major Rundle, E.A., for exped.	697	1721	8	6	14	9	4
"	" for line of commun.	125	10633	7	11	15	5	1
"	E. A., per Major Stuart Wortley for expedition	147	2051	5	8	16	8	2
"	"		1479	0	0	144 at 10	0	0
"	Capt. Brocklehurst, D.A.A.G. ...	9	147	13	10	3 at 13	0	0
"	Capt. Hemphill, 1/ Berks ...	6	78	0	0	16	8	2
"	A. C. G. Nugent, Dongola	3	30	0	0	13	0	0
"	Capt. Brocklehurst, Dongola and Korti	96	1282	3	4	10	0	0
"	Major Kitchener, R.E., E.A., Dongola and Korti	263	3069	15	10	13	7	1
"	Capt. Lysons, V.C., E.A. ditto	437	5715	8	2	11	13	5
"	A. C. G. Graham, Dongola	95	1108	10	0	13	1	7
"	Lieut. Stewart, M. L., Shabatut...	165	2417	0	0	13	5	0
"	Major Turner, R.A.	13	175	0	0	14	13	0
"	Capt. Leach, R.E., Dongola	16	208	0	0	13	9	3
Dongola and southwards	Lieut.-Col. McCalmont, L.C. Rgt. Abu Kusi	45	560	10	0	13	0	0
"	Lieut.-Col. Tolson, 1st Sussex, Debbch	19	328	12	10	12	9	1
"	Director of Transport, Korti	6	92	10	0	17	6	0
"	Sir E. Wood, Jakdul	6	66	3	4	15	8	4
"	Kashif of Ambukkol	14	166	13	4	11	0	7
"	Major Barrow, M.I., Merowi	105	1525	16	5	11	18	1
"	Lieut.-Col. Colville, Gren. Guards, Dongola, Merowi	360	5311	5	0	14	10	8
"	Major Hunter, Abu Kusi...	4	40	11	6	15	15	1
"	A. C. G. Rainsford, Korti, &c.	52	814	16	8	10	2	10
"	Purchase Committee, Tani	35	463	3	4	3	5	5
General	Bought in from officers	35	575	10		13	2	11
	Total	7990	106637	19	3	16	8	10
	Animals transferred to the Transport.							
Cairo ...	Transferred from Commissariat	200						
Wady Halfa ...	" " Egyptian Army	13						
Wady Halfa ...	" " R.E. Departmt.	10						

For fully 8 weeks from the middle of September agents were busy purchasing the number of camels required for mounting the three camel regiments, the three transport companies, the Bearer Company, moveable remount depôt, moveable field hospitals, &c., &c., the camels in every case being sent to Assuan where most of these services were first organised.

Saddlery.

The capabilities of Cairo for furnishing new equipment, at no time very extensive, were utilized as far as possible in turning out riding and pack saddles, and the other equipment required for the expeditionary force. No assistance was received from home on this score, all that was needed was procured locally.

In the beginning of September, the saddlery and equipment required for the small corps of Mounted Infantry were in course of being constructed by the manufacturing department of the Egyptian War Office, and this corps left Cairo before half of its saddlery had been completed. When suddenly the idea of employing a large body of soldiers mounted on camels was entertained, this decision caused a demand to be made for saddlery, far in excess of what the Egyptian War Department could undertake to deliver within a reasonable period of time; means had therefore to be found for supplementing the equipments it could turn out, by others purchased in the local markets or made by contract.

Inquiries made in Lower Egypt as to the possibility of purchasing ready-made riding saddles in any number, only elicited the reply that none were procurable; hence there remained no other alternative but to call in the aid of a contractor.

The saddle quite recently adopted for use in the Mounted Infantry was constructed on a solid model, it has an iron seat and is further strengthened beneath the seat by an iron plate which is fastened to the woodwork and extends nearly the whole length of the saddle. The camel riding saddles in use in Lower Egypt, are on the other hand free from iron work, entirely constructed of wood, bound and kept together by raw-hide lashings and about 20 lbs. lighter than the above. The iron work in the new saddles thus became a serious obstacle in the manufacture of the Mounted Infantry saddles, necessitating skilled artificers, of whom but few were obtainable, and adding considerably to the time required to complete a large number of them. Time being wanting, other patterns had to be examined, the selection resting on one which the contractors could undertake to deliver within a reasonable period of time.

Two patterns only promised to be likely to fulfil our

requirements; one the old Egyptian pattern ridding saddle, the one which had only lately been supplanted by the new Mounted Infantry pattern saddle, the other the Maklufa, used by the Arabs in Upper Egypt and the Sudan. The latter is however hardly adapted for manœuvring, and to men habituated to take a grip of the saddle, riding purely by balance would be aught but easy; in a saddle like this, if the animal swerves the unpractised rider would undoubtedly sustain a severe fall. The Maklufa saddle is further illsuited for the carriage of a large and cumbersome kit.

Putting aside, however, the question as to fitness, a search made through the bazaars of Cairo only produced three old Maklufas; good seasoned wood, such as is required for making saddles of this description, was wanting; skilled artificers to construct them were not forthcoming; and not a single contractor offered a tender for their manufacture. The choice hence was restricted to a light riding saddle (made very much on the pattern of the old Lower Egypt camel riding saddle) for which a contract was made by the Ordnance Store Department.

Taking everything into consideration, 2506 riding saddles were completed in Cairo in a shorter space of time than could have been reasonably expected, each saddle being fitted with suleetah bags, water bottle, water skin, baggage straps, etc. . . .

The light pattern saddle has no regular seat, but by placing a blanket under the covering pad of the saddle a very comfortable seat is obtained, affording sufficient protection to the camel's hump; the saddle, as has been already stated, is far lighter than the iron seated one, and very easily repaired if broken. A great defect of the Mounted Infantry saddle, which is not experienced with the lighter pattern, is that it is too broad to allow of a good grip being taken.

The dry climate of the country and the saddles having been exposed to the powerful rays of the sun and much rough handling on the way to Assuan, had so far acted on the raw hide lashings which kept the light saddles together, that, on their reaching that station, many were found to be damaged, in others the lashings in tightening had been cut by the sharp edges of the wood work. These defects were soon remedied, the damaged lashings being removed and the saddles being bound with telegraph binding wire instead; this substitution of wire for raw hide lashings turned out excellently, and in no case did a saddle during the campaign require rebinding.

The baggage saddles used in the Nile expedition and which deserve notice, may be reduced to three kinds; the camel pad brought over from Aden with the camels landed at Kosseir, the Sohag saddle, and what might be called the regulation pack saddle. The Aden saddle or pad is well finished and covered with matting, it is however very large and heavy, measuring

fully 4 feet in length; the natural result of its length is that it inflicts wounds on the loins, particularly when used with small animals.

Notwithstanding the affection with which the Aden drivers regarded these saddles, there were few camels of those which arrived from Aden that did not show signs of bad wounds on the hip or loin. One hundred of these saddles were received, and, as there were no means for reducing their length, they were ordered to be retained at Assuan for purely local work. . .

The Sohag saddle, of which 200 about were purchased, has a solid tree in two pieces connected by a cross bar of wood, which bears the loading ropes and nets. Of the various pack-saddles in use, this, when slightly altered, was the best. The saddler sergeant of 11th Company, Commissariat and Transport Corps, altered some of these saddles and made them very efficient. The cross piece or bar of wood which connects the trees, was morticed into them, and their lower limbs were connected by a second piece of wood screwed on. These saddles so altered, properly lashed, cut down to a size to suit the various animals, and with well stuffed pads, form a rigid and excellent pack-saddle, particularly suited for small camels.

The third kind of packsaddle we have called the regulation pack-saddle, as being the one in general military use in Egypt for the British service and the only one turned out by the Ordnance Store Department. This saddle is wrongly constructed, the tree is not rigid enough even when the saddle is well lashed, hence there is too much play. In length it is 3 feet 6 inches, and is bound with raw hide to keep it firm. The raw hide lashings under the burning sun of Egypt gets very dry and break, then the wooden keys which keep the tree boards together come down on the back of the animal, and their sharp edges cause severe wounds, very difficult to heal. This is all the worst because when the animal is loaded it is impossible to ascertain that the lashings have given way, and the injury is only discovered when the load is removed. The length of the rear pads and sharp hard corners press on the hip and loins, and after many hours of continuous travelling generate severe galls.

To make this saddle useful and to prevent it from generating sore backs and other wounds, the trees should be brought closer together and the pads shortened by about 4 inches, the stuffing at the back being pressed in so as to make the pad fuller behind than it is in front. The configuration of the animal's back demands this as the only means for keeping the load straight, and to guard against its sloping down and pressing unduly against the loins. The raw hide lashings should be discarded, spun yarn or tarred-rope lashings being substituted for them both in front and rear, and bound very tight. Saddles altered in this manner will be found to answer as a make-shift, but no

more saddles of this pattern should be made, any new saddle should have a rigid tree similar to the Sohag saddle, or more correctly speaking a tree in two pieces firmly joined together.

Except the Sohag pattern pack saddle no other native saddle appears to recommend itself, the very fact of so many animals bearing marks of severe wounds is a convincing proof that the saddle in general use in the country is anything but good.

Drivers.

* * * * *

The difficulty of obtaining reliable drivers, on which so much of the efficiency of the transport must always depend, was taken into account at a very early date. Thus in the earliest stage of the preparations for the relief of Khartum it had been considered by the General Commanding the Forces in Egypt highly desirable, indeed absolutely necessary, to obtain a body of reliable and competent men from some foreign country for this purpose. The good work done by the Aden men at Suakin in the past spring had not been lost sight of; the Political Resident at Aden was therefore requested to secure the services of 500 drivers from that Dependency, for employment on the Upper Nile. Altogether 590 men were obtained from this source.

This number would have about sufficed for the two Transport Companies and part of the Bearer Company, but when later on it was decided to raise an additional transport company and to form a moveable remount depôt, it became at once apparent that we had not sufficient Aden drivers for all purposes. All inquiries tended to prove that it was useless to hope to secure the services of good and reliable drivers in Lower or Upper Egypt, hence in October, after the order to increase the transport was received, it was suggested that a demand should be telegraphed to the Political Resident at Aden for an additional raising of 500 drivers, the men lately arrived from that place having unanimously represented that any number were willing to come forward and serve with us.

On the supposition that the additional drivers would eventually arrive too late to be of any real use, this suggestion was not accepted, and we had good reason later on to regret this error in our calculations. Endeavours were made to secure drivers from Esneh, Assuan, and other places, but nearly all the men obtained from these localities quitted the transport on reaching Wady Halfa and no inducement would make them proceed south of that station.

Several parties of men sent by the Mudir of Esneh turned out badly. After having (so General Grenfell was informed) *volunteered* to serve at Halfa and south of that station, and received an advance of pay, they drew back and refused to proceed south of Wady Halfa or even to refund their advance. Few of them, if any, were camel drivers by trade, and to them the loading of the camels came as strange as to the European soldier. These men were taken before the Mahmur of Assuan to attest their willingness to proceed with us as drivers to Wady Halfa and south of it, but even this precaution proved of no avail; they had evidently been pressed by the Mudir, and once out of his Mudirieh they cast their engagement to the wind. That no reliance could be placed on these men had been pointed out by Brigadier General Grenfell as far back as the middle of October, when on this belief he strongly supported the suggestion for a further supply of Aden men.

The pay offered for camel drivers in Cairo to induce men from Lower Egypt to proceed to Wady Halfa and south of it, three shillings a day, was absurdly high but even that high rate tempted very few men to come forward. The Political Resident at Aden, in order not to spoil the market, did not consider it desirable to avail himself of the permission, allowed him from Cairo, to offer high wages to the drivers he enlisted for us, and those who were secured by him were found willing to serve for rupees 18 per month with rations. Naturally enough when the Aden drivers found out that the Cairo men were receiving higher wages for doing the same work they asked for an increase of pay, but they advanced their demands with all moderation. The lazy good-for-nothing local drivers at Assuan, on the other hand, had no sooner become aware that two shillings a day had been offered to the Esneh men than they struck work, insisting on having the same increase allowed to them, though working locally in the close vicinity of their homes in the town.

A smart boy from Aden was worth a dozen of the latter. Always cheerful and ready to work, with a supreme contempt for the natives of Egypt, these Aden drivers gave satisfaction to everybody, and their willingness to work was attested by every officer who had anything to do with them during the expedition.

With even the fairest treatment and regularity in payments, the local men, after promising not to leave us, deserted or refused to proceed; the only plan left for obtaining drivers in their place at Wady Halfa, was to take men who had up to that moment been employed on portage and hauling work, 300 of whom had been reported to be camel drivers by occupation. These Dongolese, however, were not camel drivers at all, and amongst them were many boys and old men. When an objection was raised to them, the reply made by the Vakil of the Mudir of Dongola was

that naturally the robust men were at their homes with their wives!

The difficulty of getting good drivers was felt at every point. When a considerable transport train had to be formed at the southern end of the Wady Halfa railway for work between the temporary terminus of the line and Akasheh, good drivers were not to be obtained, and we had to content ourselves with getting such men as the offer of good pay would tempt to stay with us. Often these men, as soon as they had made what they considered a sufficient sum of money, would take French leave, a substitute taking their place without authority, hence the roll of the drivers was worthless, and endless trouble was experienced in making payments, for often there was no one to answer to the original name on the roll.

It only requires working daily convoys to see the material difference it makes having good and bad drivers. The time taken in saddling and turning out, the great length of time occupied in loading, the number of loads that require to be readjusted just after starting off, all add to the time the animal is kept at work and is deprived of his rest.

Forage.

In the matter of forage the camels in Upper Egypt find little green nourishment to feed upon, hence a large collection of animals, such as the employment of a large body of troops demands, would have fared badly had not suitable provision been made to meet its wants. Contracts had to be made at an early period for the delivery of grain (beans, dhura, or barley) and tibia (chopped straw) in various localities, both to feed the camels when stationary and to form depôts in suitable places on the intended line of march.

The ration for camels was fixed at 10 lbs. of grain, with 10 lbs. of tibia for each light animal, and at 10 lbs. of grain with 15 lbs. of tibia for each heavy baggage animal. Some of the latter were such large fellows, that doubts were entertained if they would be able to work and keep in condition on this allowance. As even the smaller ration the desert camel does not get, the camels of the force fared better therefore with us, up to a certain time, than they did under their former owners. The animals seem to relish their ration of grain above all; they eagerly watch its issue and set on it at once, crunching their beans with the greatest apparent relish: seldom any remains untouched. The ration allowed should, however, be supplied in full, whereas complaints were repeatedly made that the sacks supposed to contain a certain measure of grain and tibia, fell short in the weight. The real weight also could not be ascertained for want of weighing implements.

With ample European supervision in the transport companies, the chance of animals not being fed and being improperly loaded was reduced to a minimum, and no transport as yet has fared better in these points.

Dépôts of forage were formed on the west bank of the Nile along the route to be taken by the Camel Regiments, Bearer and Transport Companies on the march to Wady Halfa, and Assuan (west bank), Kurteh, and Tomas were selected as the most suitable localities for this purpose. The route by the right bank between Assuan and Wady Halfa, though shorter than that on the left bank, is so bad for loaded camels that none were sent by it; horses and mules were moved on this road, but had the greatest difficulty in getting along.

G. A. FURSE, Lieut.-Col., Director of Transport.

Cairo, July 12, 1885.

APPENDIX 12.

(See page 78.)

SCALE OF RATIONS.

The following will be the rations for troops at, and south of Assiut, for each man.

I. Ordinary field ration daily :—

- $1\frac{1}{4}$ lb. fresh, or 1 lb. preserved meat.
- $1\frac{1}{4}$ lb. bread, or 1 lb. biscuit or flour.
- $\frac{1}{3}$ oz. tea.
- $\frac{1}{3}$ oz. coffee.
- $2\frac{1}{4}$ oz. sugar.
- $\frac{1}{2}$ oz. salt.
- $\frac{1}{36}$ oz. pepper.
- 1 lb. fresh vegetables, or 1 oz. compressed vegetables, or 1 tin erbswurst.
- $\frac{1}{320}$ gallon lime juice, with $\frac{1}{4}$ oz. sugar.

II. When any other articles of food become available, they must be substituted for the above, on the scale laid down in paragraph 13 Allowance Regulations, 1884, or (when the regulation does not apply), as may be laid down by the General Officer Commanding from time to time in orders.

III. Tobacco and soap on repayment.

IV. Boat ration (only to be drawn when ordered by the General Commanding the Expedition) :—

Preserved corned meat, 1 lb. on four days out of six.

„ fresh meat, 1 lb. on one day out of six.

Ham or bacon, 1 lb. on one day out of six.

Fresh meat, 1 lb. in substitution for 1 lb. of any of the foregoing, whenever it can be procured.

Cheese $\frac{3}{4}$ oz. daily.

Biscuit, navy or cabin, 1 lb. five days out of six.

Flour, 1 lb. one day out of six.

Bread $1\frac{1}{4}$ lb. in substitution for 1 lb. of biscuits, whenever procurable.

Baking powder, $\frac{1}{2}$ oz. to 12 lbs. of flour.

Cabin biscuit will not be made use of except for sick men until sanctioned in General Orders.

Daily :—

1 oz. tea.

3 oz. sugar.

$\frac{1}{4}$ oz. salt.

$\frac{1}{80}$ oz. pepper.

$\frac{1}{2}$ oz. rice.

1 oz. preserved vegetables, or 12 oz. fresh vegetables.

$\frac{1}{1280}$ gallon vinegar.

$\frac{1}{810}$ gallon lime juice.

$\frac{1}{3}$ oz. oatmeal.

Pickles $\frac{1}{2}$ oz., four days out of six.

Jam or marmalade $1\frac{1}{2}$ oz., two days out of six.

Erbswurst, 1 tin every three days.

Tobacco $\frac{1}{2}$ lb. every fifteen days.

Soap $\frac{1}{2}$ lb. every fifteen days.

Being on repayment, these quantities may be modified so that the total quantities of 40 lb. tobacco, and 35 lb. soap for one hundred days for 12 men be not included.

V. Medical comforts will only be issued on the order, in writing, of a medical officer.

VI. Spirit ration $\frac{1}{84}$ gallon of rum, only on special recommendation of senior medical officer, and special sanction of officer commanding on each occasion of issue.

VII. Natives (Egyptian) ration 1 lb. bread, rice, biscuits, or flour; $\frac{1}{2}$ lb. meat, fresh or preserved, coffee $\frac{1}{3}$ oz., sugar 2 oz., salt $\frac{1}{2}$ oz. daily.

VIII. The ration of forage will be daily as follows:—

For English horses, 10 lb. corn, 12 lb. hay or chopped straw, 1 oz. salt.

For native horses and mules, 8 lb. barley, 8 lb. chopped straw, $\frac{1}{2}$ oz. salt.

For camels 10 lb. beans, 15 lb. chopped straw.

The scale of equivalents laid down in paragraph 153 Allowance Regulations, will be in force, with the addition that $\frac{3}{4}$ lb. hay cake will be equivalent to 1 lb. corn.

IX. The ration of fuel will be such as can be locally obtained, but will never exceed 3 lb. wood per man per diem.

Candles will be issued on the scale laid down in paragraphs 213 and 214 Allowance Regulations.

X. The daily ration to Aden camel drivers will be:—

Biscuit or rice...	...	$1\frac{1}{2}$ lb.
Dates, wet	...	1 „
Ghee	...	2 oz.
Sugar	...	2 „
Coffee	...	$\frac{1}{3}$ „
Salt	...	$\frac{1}{2}$ „
Onions, when procurable,	...	2 „
Or dhal	...	4 „

APPENDIX 13.

(See page 78.)

REPORT ON WHALER RATIONS.

Senior Commissariat Officer, Nile Expeditionary Force, to Chief of Staff.

KORTI,

25th January, 1885.

1. As the troops composing the force have now at length begun to consume the whaler rations, it is a fitting time to lay before you an account of how the packages have stood the very severe handling that they have been exposed to.

2. I would begin by pointing out that under the most favourable circumstances there was no escape from having to load the boxes twenty times and unload them twenty times, on rail, boat, or camel, between Alexandria, and Korti; but if any accident happened to the boats, or if the boats had to be lightened in order to be dragged over a bad bit of river, additional unloading and shifting of cargo necessarily took place.

3. The cases have therefore been well tested, and the following is the result :—

4. In the first place, there is no doubt that in the important respects of strength, size, and weight, the packages sent out on this occasion are an immense advance in the direction of improvement over anything that has fallen to the lot of previous expeditions or campaigns.

5. As regards strength, the Woolwich cases have stood this rough experience well. There was not only rough handling over rocks and steep banks and on the backs of camels to be experienced, but they had also to be for months exposed all day to the sun in the driest climate in the world. It is only necessary to look at the heavy losses that occurred (see list annexed) where the supplies were allowed to remain in trade cases, in order to perceive that real economy is obtained by repacking supplies for an army in the field into the well-made and stout Woolwich cases.

6. When the pattern of the case was settled, it was thought that the whaler rations would be eaten from the time the troops left Sarras, and therefore the tops were screwed down instead of being nailed, so as to enable a case to be opened and part of the contents used, and then closed down again without being broken. This unfortunately proved a prolific source of weakness and loss after it was decided not to touch the whaler ration until arrival at Korti. The climate dried up the wood to such an extent that the screws could be turned with ease with a knife or bit of hoop-iron. . . .

7. The preserved meat tins, by their own weight, forced off the covers of the boxes which contained them as soon as the screws had lost a tight hold in the wood. Although it is only right to mention this, I do not think it could have been foreseen. It is one of the unavoidable accidents of war.

8. Size and weight go together; where weight is kept down the size will be small.

9. In the present instance the heaviest cases were the flour and the preserved meat, of 84 lb. and 83 lb.; the lightest was the matches, weighing 13 lb.; whilst the average was 55 lb. to 60 lb.

10. I would deprecate any cases being more than 60 lb. in future expeditions.

11. The advantages the cases have been found to possess are—

- (a.) They are easy to handle by one man, whether to carry from place to place, or to pack in a high pile on the wharf, or in the store.
- (b.) They do not break to pieces with their own weight when dropped or when any accident happens.
- (c.) Fewer accidents happen with such light cases than with heavy ones.
- (d.) They can be loaded or unloaded from a barge or truck, &c., in at least one-half the time that the same weight of heavier packages would require.

12. I attach a detailed statement of the percentage of loss that has been sustained up to the present. It is, of course, an estimate, as a close statement can only be prepared after all the accounts are rendered and examined.

13. It will be seen that the chief losses have occurred in those articles which have either been packed in trade cases, or else—such as jam, sugar, tobacco, &c., are of attractive character.

14. I would, however, call special attention to the lime juice,

(S.C.1)

P 2

of which a loss of 25 per cent. has been sustained by the breakage of the bottles. It is very serious in an expedition to have to reckon upon so great a loss and there is the same amount at least that evaporates and breaks away when the lime juice is in casks. I would strongly urge that the aid of chemists be called in to devise a mode in which the liquid may be dessicated and carried in tins, the same way as tea and coffee, or that an attempt be made to place it in stone jars. It may be taken for granted that where troops operate in a country where lime juice is necessary, that country will be one where much rough inland travelling is necessary, and the packages containing food must sustain hard usage.

15. It is too early yet to speak of the quality and scale of the whaler ration. After the column under Major-General Earle, C.B., C.S.I., have lived for one hundred days upon it, we shall no doubt get some very interesting reports; but I think that all are agreed that the quality of every article, without exception, is excellent, and better than has been supplied before.

(Signed) E. HUGHES, D.C.G.,
S.C.O., N.E.F.

DETAIL Statement of the Percentage of Loss sustained on
Whaler Rations.

Articles.	Trade or Wool- with cases.	Percentage of damage.	Cause of Damage, and Remarks. ¹
Preserved, corned, and fresh meat, and boiled mutton	W	1	The Woolwich cases were strong and good; but the centre piece of the top was screwed, not nailed on. When the wood dried under the influence of the climate the screws lost their hold, and the weight of the tins was sufficient to make the centre piece fall away. Then the tins fell out of themselves. Except for this fault they have stood better than any other item of the ration.
Bacon	T	1	The cases of Hamburg bacon were altogether too weak for the weight of the contents, and many bare tins were seen denuded altogether of the outer wood. The tin would not stand handling for long when so unprotected. Cases of Canadian bacon have stood well.
Cheese	T	10	The cases stood very badly, and much was lost in consequence.
Navy biscuit	W	2	Stood fairly well.
Cabin biscuit	T	30	Both tins and cases were too weak to stand handling. Hoop-iron was badly fastened on, and the tins badly soldered.
Flour	W	2	Stood well.
Pickles	T	5	Very poor cases of thin wood.
Jam and marmalade ...	W	5	Cases good.

DETAIL Statement of the Percentage of Loss sustained on
Whaler Rations—*continued*.

Articles.	Trade or Wool- with cases.	Percentage of Damage.	Cause of Damage, and Remarks.
Tea	W	20*	The cases very good. The chief cause of loss was that the shellaced linen covering of the sliding opening was not able to keep out water, and the tea got wet and mouldy.
Sugar and salt	W	25	The waterproof bags were an afterthought, and they arrived only on the 27th November, too late to be given to the first four regiments that started. When they did arrive they were not found large enough to contain the bag of sugar, so as to enable the neck to be drawn tight. It was, therefore, not perfectly protected from wet, and much was lost. The waterproof salt bags were large enough, but let in water at the neck. Some of the losses of these articles are attributable to theft on the part of native boatmen and camel drivers.
Lime juice and vinegar	W	25	Mainly from bottles breaking when the cases were being shifted. It was generally the outer bottles that were broken and not the middle ones.
Erbewurst	W	2	Cases stood well.
Preserved vegetables ...	W	2	Cases stood well.
Cocoa and milk	W	2	Cases good, and loss entirely from thieving or wrecks.
Rice, baking powder, pepper, tobacco	W	30	These are all packed in unsoldered tin cases, with paper shellaced over the crevice of the lids. This paper is seldom perfectly stuck, and even then is soluble, and admits the water, hence the very large loss.
Soap	T	5	Stood fairly well, being strong cases.

* Under estimated. It turned out to be 40 to 50 per cent. loss.

(Signed) E. HUGHES, D.C.G.,
S.C.O., N.E.F.

APPENDIX 14.

(See page 80.)

SYSTEM OF MAKING PAYMENTS FOR COMMISSARIAT SERVICE
AT CAMPS AND STATIONS WHERE THERE IS A DISTRICT
PAYMASTER.

1. The Commissariat Officer will on no account hold any money on imprest, except as in paragraph 6.

2. The payment of supplies purchased, of wages of crews of boats, or of incidental labour or services, will be made by the District Paymaster upon orders to pay on annexed form, signed by the Commissariat Officer.

3. The Paymaster will be responsible for taking the necessary receipts, and for asking for, and giving, last pay certificates when necessary.

4. Both the Commissariat Officer and the Paymaster will keep running abstracts, into which the orders to pay will be entered as they are given or paid respectively.

Separate abstracts will be kept for each item of Army Estimates, *i.e.*, provisions, forage, fuel, &c.

At the end of any convenient period, but at the longest once a week, a settlement and comparison of abstracts will be made between the two officers. The Commissariat Officer will make the necessary certificate of "taking on charge" of "actual employment" at the foot of both abstracts, and obtain the approval of Senior Commissariat Officer to both, and return them as complete vouchers, in duplicate, to the Paymaster.

5. This system will not preclude the passing of complete bills for large payments, whenever convenient, instead of using the annexed form.

3. When it is more convenient to the Commissariat Officer to make small payments for purchases or wages by his own hands, he will receive from the Paymaster a small sum of money, on temporary imprest, which must be accounted for weekly, at the farthest, to the Paymaster.

By Order,
(Signed) E. HUGHES, D.C.G.,
Korti, 7th March, 1885. S.C.O., N.E.F.

APPENDIX 15.

(See page 80.)

COPY OF STATE SHOWING CONDITION OF SUPPLY FURNISHED
BY S.C.O. TO THE CHIEF OF THE STAFF.

Statement of Supplies South of Assint.

28th February, 1885.

Stations or Districts.	Rations, in Thousands.										
	Preserved Meat.	Breadstuffs.	Groceries.					Tobacco.	Soap.	Camel Corn.	
			Tea and Coffee.	Sugar.	Salt.	Pepper.	Lime-juice.				Preserved vegetables and Erbswurst.
From Assiut to Railhead	673	997	1,058	1,235	951	557	1,851	399	553	338	...
Kababish convoy	4	6	28	...	81	230	...	2	...	...	...
Railhead to Dal	...	...	94	...	121	57	44	176	101	70	...
Dal to Abu Fatmeh	35	92	74	159	89	...	...	239	...	3	...
Abu Fatmeh to Korti	36	46	...	128	45	17	94	...	...	...	34
Abu Fatmeh	...	141	...	...	...	...	...	...	...	...	7
Debbeli	18	19	14	2	1	2	31	18	47	...	1
Dongola	3	193	3	...	2	...	...	2	1	...	17
Korti	234	338	534	31	51	345	435	511	39	39	59
El Howeiyā	13	13	3	3	3	3	3	4	...	...	12
Jakdul	10	41	98	29	19	148	100	89	...	...	7
Abu Dom	39	46	35	4	4	11	29	36	10	8	...
River Column	147	69	258	159	54	...	300	129	87	27	...
First Korosko convoy	10	100	84	110	110	110	110	73	192	192	...

APPENDIX 16.

(See page 82.)

CALLINGS OF THE NON-COMMISSIONED OFFICERS AND MEN OF THE
ORDNANCE STORE DEPARTMENT.

Clerks	...	...	...	...	25
Labourers	...	...	...	...	29
Carpenters	...	...	...	...	15
Armourer	...	...	...	...	1
Engineers	...	...	...	...	2
Ironmonger	...	...	...	...	1
Shoemakers	...	...	...	...	4
Wireworker	...	...	...	...	1
Sawyer	...	...	...	...	1
Fitters and Turners	...	...	...	...	2
Blacksmiths	...	...	...	...	6
Shoeing Smith	...	...	...	...	1

Baker	...	...	...	...	1
Hammerman	...	...	...	...	1
Cooper	...	...	...	...	1
Gardener	...	...	...	...	1
Saddler	...	...	...	...	1
Painters	...	...	...	...	2
Tailors	...	...	...	...	4
Telegraphist	...	...	...	...	1
Cabinetmaker	...	...	...	...	1
Groom	...	...	...	...	1
Servant	...	...	...	...	1

APPENDIX 17.

(See page 82.)

HOSPITALS ESTABLISHED ON THE LINE OF COMMUNICATIONS AND
WITH THE FIGHTING COLUMNS.

Station or Post.					No. of beds.	Remarks.
On the Line of Communications	Assiut .. .. .	..	..	..	12	
	Assuan .. .. .	..	..	..	200	Dieted.
	Korosko .. .. .	..	..	..	40	
	Wady Halfa .. .. .	..	..	..	500	Dieted.
	Gemai .. .. .	..	..	..	50	"
	Sarras .. .. .	..	..	..	25	
	Semneh .. .. .	..	..	..	25	
	Ambako .. .. .	..	..	..	25	
	Tanjur .. .. .	..	..	..	25	
	Akasheh .. .. .	..	..	..	200	
	Sarkamatto .. .. .	..	..	..	75	
	Abri .. .. .	..	..	..	25	
	Absarat .. .. .	..	..	..	25	
	Kajbar .. .. .	..	..	..	25	
	Koyeh .. .. .	..	..	..	25	
	Abu Fatmeh .. .. .	..	..	..	180	Dieted.
	Dongola .. .. .	..	..	..	100	"
	Shabatut .. .. .	..	..	..	25	
	Abu Kussi .. .. .	..	..	..	50	
	Kurot .. .. .	..	..	..	200	
	Debbah .. .. .	..	..	..	25	
	Tani .. .. .	..	..	..	200	
	Korti .. .. .	..	..	..	200	Dieted.
Abu-Dom .. 25 beds (dieted) .. El Howeiyah ..					50	
River Column .. 200 " .. Jakdul Wells ..					75	
					Abu Klea ..	50
					Gubat ..	75

APPENDIX 1

(See page 82.)

PERSONNEL OF FIELD HOSPITAL.

Medical Officers	...	...	...	...	4
Staff-Sergeant	...	...	...	...	1
Sergeants	...	...	...	...	4
Corporals	...	...	...	...	2
Cooks	...	...	...	...	2
Privates, Medical Staff Corps	...	...	...	...	31
Total					44
Bâtmen	...	...	...	...	4
Interpreter	...	...	...	...	1
Grand total					49

The following transport was provided for it:—

Camels, Riding Officers'	...	...	...	...	4
" " N.-C.O.'s (1 per section)	...	...	...	...	4
" baggage	...	...	...	...	94
Total					102

APPENDIX 19.

(See page 83.)

MEDICAL EQUIPMENT FOR EACH BATTALION, AND IN EACH WHALER.

Each regiment proceeding up Nile was supplied on the following scale:—

1 pair of field panniers, 1 field companion, 1 water bottle, 4 bottles of brandy, 6 bottles of port or Tarragona, 48 tins of condensed milk, 2 lbs. of arrowroot, 2 lbs. of sago, 4 lbs. of sugar, and 4 dozen $\frac{1}{4}$ -lb. pots of extract carnis.

In each whaler there was a medical comfort box containing:—

3 bottles of brandy, 3 bottles of port, 12 $\frac{1}{4}$ -lb. pots of extract carnis, 4 tins of condensed milk, and 6 tins of cocoa and milk, besides a proportion of alum, salt, matches, compressed tea, and permagomate of potash, and a knife and corkscrew.

APPENDIX 20.
(See page 83.)

HOSPITAL ADMISSION AND DISCHARGE BOOK.

CORPS

Extract from Admission and Discharge Book of
Hospital Station

Date

Regimental No.	Rank and Name.	Age.* yrs.	Total Service. yrs.	Service in Egypt.*	Date of Admission.	Date of Discharge.	Disease.	Destination.†	Remarks.
3471	Private Atkins, T. ..	30	10	1 year	Sept. 7	..	Diarrhœa	Remaining.	
2643	Serjeant McGregor, A.	25	5	4 ms.	" 8	..	Diarrhœa	"	
1475	Private McCarthy, P.	28	7	2 ms.	" 9	Oct. 14	Pneumonia	Duty.	Transferred to
2344	Corporal Smith, J. . .	40	12	6 ms.	" 10	15	Diarrhœa	Wady Halfa	Transferred from Debbelh.
	Lieutenant Jones, H.	22	4	1 year	" 10	..	Pneumonia	Remaining	
2549	Private Brown, T. ..	40	15	2 ms.	" 11	15	Hepatitis	Died.	

* To be filled in only in the copy for the Statistical Officer.

† In case of death write Died in red ink.

APPENDIX 21.

(See page 84.)

SCHEME FOR BOAT SERVICE FOR SICK CONVOYS BETWEEN ABU
FATMEH AND SARRAS.

"The Committee ascertained from the General of Communications, that no special boats will be available for the transport of sick on their return journey.

"The Committee also ascertained that donkeys will be available for the 'portages.'

"The Committee, having no practical cognizance of the line, accept the portages that have been laid down by the General of Communications in a table communicated to them.

"They assume that there will be stationary hospital at Abu Fatmeh, and they recommend the following organization:—

"The sick to be sent in convoys, consisting of 30 each, in charge of a medical officer, with one non-commissioned officer and five privates, Medical Staff Corps, to assist him.

"The convoys to be made up and equipped at Abu Fatmeh, under the superintendence of the senior medical officer there.

"The medical officer in charge of each convoy to be responsible for it throughout the journey, and hand it over to the medical officer in charge of the base hospital at Halfa.

"The sick to start in boats at Abu Fatmeh, completely equipped for the journey.

"The boats to be of sufficient capacity to enable every man to lie down on his stretcher.

"At each end of a portage there might be tents in which the sick could lie while the transport was being got ready; it being assumed that there would be no delay beyond an hour or so on the journey. (Buildings could take the place of tents if available.)

"The means of transport across the portages to be bearers to carry the stretchers of helpless cases, and donkeys or mules for such men as can ride.

"The stretchers of men who ride could be utilized to carry across the arms and accoutrements of the sick, and the medical stores, &c., that accompany the convoy.

"A supply of stores, to equip convoys, to be kept at Abu Fatmeh, and, whenever a convoy leaves, a fresh supply must be passed up the line to replace those used.

"The senior medical officer at Abu Fatmeh to make demands on the Ordnance Store Department for the stores required, in sufficient time to enable the supply to be made.

"A table, giving details of the transport required to carry out the proposals of the Board is attached.

"The tents at each end of the portages would also be available for the temporary shelter of any men who might be required to be left behind by troops going up the river.

"It is presumed that at one end of each portage provisions and wood will be obtainable.

"The railway must have trucks fitted up to carry the sick of the convoy.

"Recommended that goods wagons should be fitted up for the sick on Zavoavski's plan."

In practice, however, it was found that whalers could alone be used at low Nile, and they were found to be particularly well suited to the work. They carried two stretchers and four less serious cases, and did from 25 to 30 miles a day.

APPENDIX 22.

(See page 85.)

PERSONNEL, EQUIPMENT &C., OF CAMEL BEARER COMPANY. *Personnel.*

Officers and Men.	No.	Remarks.
Medical officers	4	* 1 acting serjeant-major, 1
*Staff-serjeants and serjeants, Medical Staff Corps	6	quartermaster-serjeant, and 1 serjeant, with each section.
†Corporals or 2nd corporals, Medical Staff Corps	8	† 2 corporals with each section.
Privates, Medical Staff Corps	86	
Bâtmén	4	
Interpreter	1	
Drivers	86	

Equipment, &c.

Articles.	No.	Remarks.
Saddles, riding, camel	109	5 camels to be supplied with country nets for small packages.
" special	100	
Litters pairs	34	
Cacolets "	66	N.B.—No provision made for tents for men, or blankets for wounded, which are intended to be supplied from the Field Hospital.
Field panniers "	2	
Water tanks "	2	
Divisional boxes 1 and 2 .. sets	2	
Stretchers	30	
Dresser-haversacks	25	If tents be carried for men and drivers, 20 would be required, and 2 for Officers, with 5 camels for transport of them.
" water bottles	25	
Blankets	100	
1-inch rope yards	100	
Boxes containing surgical equipment and bandages, &c. .. sets	4	
Kettles for cooking	1	
Picketing gear yards	227	
Kettles, camp cooking sets	1	
Buckets, canvas	12	
Stationery, &c. box	1	

APPENDIX 23.

(See page 85.)

EXTRACTS FROM REPORTS ON MILITARY TELEGRAPHS, NILE
EXPEDITIONARY FORCE.*Report by the General of Communications.*

1. For the purposes of the expedition a telegraph line existed along the west bank from Cairo to Dongola. Up to Halfa the line was maintained by the Egyptian Telegraph Department, and one wire was specially reserved for the Army Telegraph Department. From Halfa to Dongola the single line was rented from the Sudan Bureau, and maintained by the Director of Army Telegraphs.

Matters did not work smoothly between the Egyptian Telegraph Department and that of the Director of Army Telegraphs

The Director of Army Telegraphs states that on the line maintained by the former, interruptions occurred on 40 days out of 180.

2. Inconvenience was caused by the fact that our stations were all on the right bank, while the telegraph line was on the left.

The river had in consequence to be crossed by wire at Assuan, Korosko, and Halfa, and communications by boat or swimmers had to be maintained elsewhere.

The distance of the main line from Kajbar also prevented its use for connecting that station with the system, causing a want very indifferently met by a heliograph to Abu Fatmeh.

3. The Telegraph Department brought out some 456 miles of line.

The work done was chiefly as follows :—

A new line Sarras to Ambako	26 miles = 26
A military line Sarras to Akasheh	50 „ = 50
A new line on old poles, Dongola to Fatmeh 40 ..	= 40
Repair of line from Dongola to Debbah	
A new line from Debbah <i>via</i> Korti to Hamdab 89 ..	= 89
A new line from Fatmeh to Kajbar	23 „ = 23

Total about 228

The line to Hamdab extended the system to a distance of 1,169 miles from Cairo.

4. In connection with this work four main offices and sixteen secondary offices were opened, and up to the end of April some 6 million words had been telegraphed along the line, while on one night at Korti, 17,000 words were despatched along the single wire.

F. GREENFELL, B. G., General of Communications.

Abri, July 4th, 1885.

Report by Lieutenant Colonel H. F. Turner, R.E. (chiefly condensed from a larger report submitted by Colonel Webber, C.B., R.E., Director of Army Telegraphs).

For the telegraphic communication, 6 officers and 118 non-commissioned officers and sappers of the Telegraph Battalion, R.E. were sent out from England, 12 of these were specially enlisted men from the Post Office Telegraph Department, but all the officers and most of the other men had been previously trained upon the postal telegraphs; all had arrived by 8th October. 456 miles of wire and a large equipment of instruments, stationary bat-

teries and other necessities accompanied them. Col. Webber, C.B., R.E., was appointed Director of Army Telegraphs.

At the commencement of the campaign an arrangement existed by which the Egyptian Administration (hereafter called E. A.) were to carry on the telegraph work at the cost of a piastre (2½d.) per word; it soon became evident from the constant interruptions and excessive delays which ensued, that the E. A. was not equal to the strain thrown upon it.

Endeavours were made by the General to obtain from the E. A., for the army, the supervision and control of the whole telegraph system south of Cairo, but without success.

The use of one wire as far as Wady Halfa was therefore obtained from the E. A., the maintenance of the whole system to that point was left in their hands.

In November an arrangement was concluded with the Sudan Bureau, by which the line from Halfa to Debbah was lent to the army on equitable terms.

Their staff* was handed over to the army and carried on their duties satisfactorily under military superintendence.

Beyond Debbah the line had been destroyed, and had to be reconstructed to Korti, through communication being established to Cairo, 1,123 miles, on Christmas eve, 1884.

As the troops proceeded, offices were successively established;† they were kept open day and night in most cases. A temporary line had been erected for 30 miles beyond Korti to Merowi; an office was opened there by Sergt. O'Donell of the Berkshire, on 6th November, and this place, 1,150 miles distant, was put in direct communication with Cairo.

On 21st Jan., 1885, the line was yet further extended 19 miles to Hamdab, by Lieut. Stuart, R.E. This, the furthest point reached, made up a total length of 1,169 miles of communication.

The system of working along this greatly extended system was that known as "single current with relays," and with translators at Assiut, Assuan, and Halfa.

Faults and interruptions continued to be extremely frequent on the section maintained by the E. A.

Colonel Webber writes:—

"Out of 180 days, October, 1884, to March, 1885, inclusive, the sum of the periods during which the wire was interrupted amounted to 40 days . . . it was understood that these interruptions were due to the breakage of the inundation embankments of the Nile, but our tests proved that the chief cause was defective maintenance and insulation."

* 1 European, 58 natives, 8 of whom were Arabic telegraph clerks, and 2 could signal in European languages.

† See Table A at end of Appendix.

An immense amount of work was, however, transacted.

The G. O. C. L. of C. forwarded over 3,000 messages, few of less than 50 words.

During the seven months ending 30th April, 1885, 80,671 messages were dealt with, estimated, with the many conversations which were held on the wire, to have contained over six millions of words.

The greatest difficulty was experienced throughout from the want of transport for stores. All the equipment except 20 miles had been retained at Assuan. Subsequently, transport was obtained for a limited amount, and the following works were executed in addition to the above:—

1. A new line on existing poles, 40 miles, Dongola to Fatmeh.
 2. A new line on new poles, $1\frac{1}{2}$ miles, station to landing-place, Assiut.
 3. Two cables, each 1 mile long, laid across river at Assuan.
 4. Five cables, each 1,000 yards long, laid across at Halfa.
 5. Two armoured cables laid across at Halfa.
 6. New line on new poles, 26 miles, Sarra to Ambako.
 7. Ninety miles repaired Dongola to Debbah.
 8. A loop line, 1,500 yards, built at Dal.
- New line on new poles, 5 miles, Assuan to Shellal.

On the receipt of news of the battles of Abu Klea, Gubat, and the fall of Khartum, there was an extreme pressure of work, 17,000 words were signalled on one night.

On these occasions charge was taken by the D. A. T. himself, and the line was closed until the General's despatches were ready, orders were sent throughout the line for officers or non-commissioned in charge to be present, and prevent any reading off of signals at intermediate stations. Private messages were next dealt with, and then press in the order fixed by the military secretary.

H. F. TURNER, Lieut.-Col. R.E.

Cairo, 12th May, 1885.

TABLE A.—MILITARY TELEGRAPHS IN EGYPT.

Mileage.			Offices.	
Main Line.	Loops.	Branch Line.	Sub-Offices.	Main Line Offices.
229	2½	..	..	CAIRO.
320	1½	..	..	ASSIUT.
	6	..	..	ASSUAN.
110		7	Shellal	
100	2	..	..	KOROSKO
		16	Gemai.	HALFA.
		17	Sarras.	
		12	Moghrat.	
		14	Semneh.	
99			Ambako.	
			Tanjur.	
			Akashch.	
			Kujbar.	
		16		
	1½	..	..	DAL
130		41	Abu Fatmeh.	
	1	..	..	DONGOLA.
90			Khandak.	
			Abu Kussi.	DEBBEH.
45			Kurot.	
			Tani.	KORTI.
1,123	14½	30		
		19	Merowi.	
			Hamdab.	

APPENDIX 24.

(See page 87.)

REPORT OF COMMANDANT OF BASE.

General Arrangements.

Cairo was the base of the Nile Expedition. Each regiment left there a depôt, chiefly composed in the first instance of weakly men unfit for hard service, but recruited by drafts from England. These depôts were aggregated into a command, with the usual staff, and quartered at the Kasr-el-Nil Barracks. The post of Commandant of Nile Reserve Depôt was held by Lieut.-Colonel Gillespie, Berkshire Regiment, and subsequently by Lieut.-Colonel Cavaye, 2nd Royal Sussex Regiment.

The correspondence, demands, etc., of the expedition was carried on in the office of the Commandant of the Base, who was the Principal Staff Officer for the Expedition at Cairo. Owing to the complex requirements of the expedition, his duties became very multifarious.

Besides the arrangements connected with ordinary English Troops, there were Canadian Voyageurs, Indian Platelayers, Arab Camel Drivers, Kroomen, Civilian Pilots and Engineers, Interpreters, and others to be dealt with, paid, clothed, fed, and transported from and to their homes; — there were steamers, and whale boats, locomotives and rolling stock, rails and sleepers, lathes and machinery, coffins, coals, umbrellas, flower-seeds, and all manner of miscellaneous articles to be furnished; and finally a building yard had to be established for the construction of seventeen stern-wheel steamers.

I append a short statement of the special work conducted at the base.

The work of the Army Departments at Cairo, in connection with the expedition, will be reported on by their respective heads. I would observe that there was a strain upon all, but particularly upon the Ordnance Store Department which had large quantities of equipments of novel construction to procure locally. The Pay Department had also, besides a great press of accounts, to provide and despatch up the Nile very large quantities of silver coin, chiefly Turkish Medjidiehs, and Austrian Maria Therasas.

Stern-wheel Steamers on Nile.

The "Lotus" arrived from England at Alexandria in small pieces, and was despatched by rail to Assiut on the 25th September, in 20 trucks, thence in barges towed by steamers to Assuan, and on thence to Semneh where she was erected.

The "Water-lily" arrived at Alexandria in the "Cameo" on 21st October, 1884, in charge of Messrs. Brodmier, Galloway and Hall.

Transmission of Troops and Stores up the Nile.

As far as Assiut, the Egyptian railways afforded, in spite of the bad condition of both permanent way and rolling-stock, an amply sufficient means for transporting troops and stores from Alexandria, Suez and Cairo up to that point. Between Assiut and Assuan, and again between Shellal and Halfa, the transport was carried on by means of steamers and barges; and also, to a small extent, by sailing boats.

With trivial exceptions, the whole of the steamers on the Nile belong to the Egyptian Government, and are under the control of the Public Works Ministry, and the Postal Administration. The passenger traffic on the Nile was under the management of Messrs. T. Cook and Sons, who had the control of seven steamers, under a contract dated 3rd August, 1880, for ten years. These vessels were placed at their disposal from the 1st November to 31st March, and as a rule lay idle the rest of the year. The Egyptian Government found the crews, and kept the hulls and machinery in order; and Messrs. Cook found coal and engine room stores. They maintained and repaired decks, cabins, awnings, cordage, furniture and articles of service; they kept an agent, a doctor, and a staff of servants and waiters on board, and defrayed the washing, lighting and incidental expenses.

The government received £ E. 16 for each passenger from Cairo to Assuan; £ E. 12 from Assuan to Halfa; and £ E. 21 from Cairo to Halfa; in all cases including the return journey.

A minimum tax on 150 to Assuan and 60 to Halfa was paid in any case.

Messrs. Cook had also a contract with the Egyptian Government, for supplying coal at various stations on the Nile to the Government steamers; — and in December 1883, placed the passenger steamers at the disposal of the Egyptian War Minister, on the basis of a payment for coal and engine stores at current prices.

The barges also on the Nile belong to the Egyptian Government.

Both steamers and barges were placed at the disposition of the British Government, and crews found for them by the Egyptian Government.

On the 1st July Messrs. Cook sent a letter of tender offering to work the river transport of English Troops and Stores on a schedule of rates per trip.

This tender was accepted on the same date, and its conditions formed the basis of the arrangements for transport on the Nile below the first cataract. Messrs. Cook and Son have

strenuously endeavoured to carry out this transport in an efficient manner. During the period of Low Nile—March, April, May, June—certain portions of the river became so shallow, that it was necessary to employ a system of working by reaches, in which the deep draft vessels could ply backwards and forwards, the barges being towed, or the cargo and passengers transhipped across the shallow bars by means of launches or light draft steamers.

The contract of 1st July was renewed by a memorandum drawn up at Korti on the 14th February; a reduction of 20 per cent. on the rates being made for the return of the expedition.

Special terms were made with Messrs. Cook for the transport of the Whale Boats from Alexandria to Halfa, at the rate of £40 each for the 800 boats. From this sum a drawback of £10 per boat was agreed to, as representing the transport from Philoe to Halfa, the expenses of which were borne by H.M. Government.

Locomotive engines for the Assuan-Shellal Railway (4' 8½") and for the Sudan Railway (3' 6" gauge) were sent up on barges or sailing boats from Cairo, there being no appliances for loading heavy weights at Assiut. Those for the Sudan line were loaded in such a manner as to admit of passing through the first cataract. The rolling stock from the Cape was sent in the same way.

The rails, sleepers, fastenings, etc., for the extension of the Sudan Railway to Akasheh and Ferkeh, were sent by rail from Alexandria to Assiut and thence by barges or sailing boats to Assuan. After passing over the Assuan-Shellal railway they were re-shipped for Halfa. Spars, tackles, crabs and other gear for lifting heavy weights, were sent up to the requisite places.

The first consignment of rails, 300 tons, reached Alexandria on 31st March, and was followed by 1,500 tons on 8th, and 1,850 tons on 21st April. The sleepers were all procured by local tender at Alexandria. By the 10th June all the material except 7 miles of rails had been despatched from Assiut, and the remainder was sent up as opportunities occurred.

For the transport of invalids certain of the large barges were specially fitted up, with double roofs, cot-beds, chairs, tables, and other appliances for their comfort. The steamers for this service also received special fittings. In addition to these the small steamer "Queen Victoria" was purchased by the National Aid Society, and plied between Assiut and Assuan with sick.

The rail transport of the sick was effected in carriages specially fitted up for the purpose in a very simple and efficient manner, the ordinary stretchers being slung from the ceiling in two tiers by ropes fitted with eyes and loops at the proper distances. The upper eyes were supported by light iron bars running along the roof, and the lower eyes were lashed to ring bolts in the floor.

A few minutes sufficed to fit up or dismantle a carriage, which held 14 lying down cases. An adjacent carriage was fitted up with kitchen and other appliances. As soon as the weather became hot, the transport was effected at night. These arrangements met with the approval of the medical officers, and were considered by the patients themselves to be comfortable.

Towards the close of the expedition, the invalids were sent when possible direct to Alexandria for embarkation, from Assiut.

Postal Arrangements

When the Sudan was in a peaceful state, there was a postal service to the Equatorial Provinces, but at the time of the commencement of the Nile Expedition, the despatch of letters, &c., by steamer, ended at Assuan; and from thence southward a camel post sufficed to carry the small correspondence which passed.

The steamer service was first extended to Halfa, and as the expedition advanced, the Camel Post was extended to Dongola, Korti, and Merowi, comprising letters, newspapers and parcels. At first the mails were sent twice a week, but as the river became low, the steamer service between Shellal and Halfa was reduced to once a week, and the dependent camel post likewise.

The weight of the weekly post (beyond Halfa) was about one ton, of which the letters only weighed 100lbs. As far as Halfa, the weight was of little consequence; but beyond it, the maintenance of the post implied the employment of a considerable number of camels, always much wanted for other purposes. An examination of the post showed that an inordinate number of daily papers formed the bulk of the newspapers, and restrictions were temporarily placed on the numbers forwarded. This appears to have arisen from the indiscriminate despatch by benevolent persons of all kinds of old papers, with the kindly intention of relieving a dearth which was felt at the beginning of the expedition, but which was almost immediately remedied. Under similar circumstances none but weekly and monthly publications should be sent.

The National Aid Society furnished a large supply of newspapers and periodicals to the hospitals, throughout the expedition.

Transmission of Parcels.

As it became evident that the expedition would be entirely dependent on its own means of transport for the transmission of parcels (other than postal) and packages, owned by private persons, a system of parcels-delivery was organised at Cairo under the charge of a baggage-master, in whose care was also

deposited the superfluous baggage left behind by the officers and men of the expedition.

The parcels were despatched with way-bills in the usual form, and although there was always some congestion of traffic between Halfa and Abu Fatmeh, on the whole the system appears to have worked satisfactorily, and it was undoubtedly a great boon to the expedition.

Subsequently, in consequence of the delay and extravagant charges incidental to the clearance and delivery by private agents of parcels arriving in Egypt, the appointment of Baggage Masters at Alexandria and Suez was sanctioned, and the machinery for transmitting parcels from England to any part of Egypt, at a minimum of cost and delay, is now in operation, the Baggage Masters being authorised to pay the duties and charges, and to recover them from the owners.

J. C. ARDAGH, A.A.G.,
Commandant of Base.

APPENDIX 25.

(See page 88.)

POSITION OF TROOPS AND STATE OF SUPPLIES AND EQUIPMENT IN EGYPT, 20TH SEPTEMBER, 1884.

Troops.

1st Battalion Sussex Regiment	Dongola.
Headquarters and Wing Mounted Infantry	{ Above Sarra, on way to Dongola in boats, to be mounted at Dongola.
1st Battalion South Stafford- shire Regiment	
	Halfa, will proceed to Ferkeh as soon as transport is available
Wing Mounted Infantry ...	Assuan, waiting for Camels.
2nd Battalion Duke of Corn- wall's Light Infantry	Assuan.
2nd Battalion Essex Regiment	Assuan.
Detachment 50 Cameron High- landers	Assiut.
11th Company Royal Engineers	{ Distributed at and above Assiut.
Railway Company, Royal Engi- neers	
Part of Telegraph Company, Royal Engineers	
9th Company, Commissariat and Transport	
11th Company, Commissariat and Transport	

1st Battalion Royal Highlanders	Cairo, to move to Assiut on 23rd September.
1st Battalion, Gordon Highlanders	Cairo, to move to Assiut about 30th September.
1st Battalion, Cameron Highlanders	Cairo and Port Said in readiness to move.
1st Battery, 1st Brigade, Southern Division, Royal Artillery, six 7-pr. M.L.R. 400-lb guns	Cairo; camels and equipment left Cairo 18th September.
19th Hussars	Cairo, in readiness to move, leaving one squadron behind.
Camel Corps	Expected at Alexandria about 10th October.

*Supplies available in Egypt, in days, for 1,000 Men.**

	Days.
Breadstuffs	695
Meat	478
Groceries	600
Lime juice	400
Vegetables	80

RESERVE OF SMALL ARM AMMUNITION TO BE KEPT UP.

Station.	Ball rifle Martini-Henry.	Patent Enfield.	Pistol. Adams.	Remarks.
Assuan ..	250,000	..	..	} All passed Assiut.
Wady Halfa ..	..	3,000	2,000	
Dongola ..	†500,000	3,000	2,000	

ARMS.

In store—Rifles, 2,000.
Carbines, 250.
Pistols, 30.
Ditto, 100 due from England.

ACCOUTREMENTS.

In store—Buff valise equipment, 2,000 sets.
Black „ 7,000 sets.

* These supplies were all collected either at Wady Halfa, or to the south of it.

† Passed Assuan.

CAMEL SADDLES.

Riding Saddles for Officers.

584 { 17 sent to Wady Halfa, 16th September, 1884.
 67 to be obtained from Egyptian Government at once.
 500 are being obtained by contract.

Mounted Infantry.

756 { 256 riding saddles sent to Wady Halfa 16th September,
 1884.
 200 riding saddles to be completed by 26th September,
 1884.
 300 riding saddles expected to be completed by 6th
 October, 1884.

Commissariat Corps.

1,350 { 50 riding saddles sent 16th September, 1884.
 500 pack saddles sent to Wady Halfa.
 800 " contracted for (200 delivered to 15th
 September, 1884).

STATE OF PURCHASED CAMELS AND DROMEDARIES.

Distribution.	Camels.	Dromedaries.	Remarks.
Left Korosko for Wady Halfa..	..	41	
Reported as purchased by Sheikh Ahmed <i>en route</i> to Korosko .. ..	..	18	
To be taken from Jowasi patrols <i>En route</i> from Assuan to Wady Halfa .. ..	..	150 to 200	
At Assuan	60	50	
<i>En route</i> from Keneh to Assuan	55	125	
At Keneh, arrived from Aden ..	41	..	These numbers given by head- men but stated by political resident to be 90 camels and 20 drome- daries.
At Assiut	60	50	
To leave Cairo for Assiut ..	9	..	
Left Aden in "Abyssinia" 16 September, 1884	150	..	
	100		

APPENDIX 26.

(See page 89.)

STATE OF SUPPLIES, SOUTH OF ASSIUT, ON THE 30TH SEPTEMBER, 1884.

In days for 7,000 men.

	Preserved Meat.	Breadstuffs.	Coffee.	Tea.	Sugar.	Salt.	Pepper.	Wood.	Linne Juice.	Corn.
En route between Assiut and Halfa ..	19	51	56	53	131	35	63	28	81	11 days for 3,000 camels.
At Halfa and south of it ..	51	47	13	13	34	29	29	2	12	1 day for 3,000 camels.
Total	70	98	69	66	165	64	92	30	93	12 days for 3,000 camels.

APPENDIX 27.

(See page 95.)

REPORT OF VOYAGE OF NASIF-EL-KHEIR.

Sir,

I have the honour to forward you a report of my proceedings from the 29th September, the date on which I left Semneh.

After leaving Semneh, I steamed up the river till dark, the river being a succession of small rapids running between very rocky islands.

There was, however, no difficulty experienced in steaming through, and I secured to the west bank about 12 miles to the south of Semneh.

30th September. Steamed up the foot of the Ambako Cataract, arriving there at 10.30 a.m., the river being slightly less rapid than after leaving Semneh, but still with swift channels between the numerous islands, and rocky shoals.

After arriving at Ambako I laid out one 7-inch head hawser, and one $4\frac{1}{2}$ -inch breast guy, and hauled the steamer through the first gate, securing to the bank for the night.

1st October. Hauled the steamer over the second and third gates at Ambako, and proceeded under steam at noon, but failed to steam through a small gate to the eastward of Kolbe Island, when I secured the ship and repacked the pistons, which were slightly leaking.

The Ambako Cataract consists of a succession of "gates," the whole length being about three quarters of a mile, the length of hawser to be worked, and the bad hauling ground, constituting the difficulty of the passage, more than the strength of the rapids.

The length of the 7-in. hawser used for the head hawser was 330 fathoms for positions 1 and 2, after which it had to be dipped over a small rocky island at 3 to steady the steamer against a sharp stream setting round the lower extreme of the island.

After leaving Ambako the river opens out to a width of 500 yards, and divides at the island of Kolbe, the eastern and navigable branch consisting of a succession of small islands which divides the river into a succession of swift narrow channels, which were steamed through with more or less difficulty.

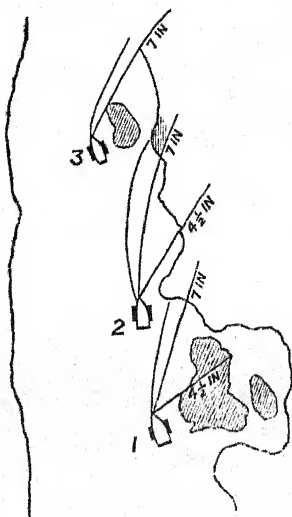
2nd October. Proceeded at daylight and passed the gate which we had failed to pass on the previous day.

At 8 a.m. the steam pinnace with Lieutenant Montgomery on board passed on the way to Tanjur cataract, which he steamed over without difficulty.

From Ambako to Tanjur the river is a succession of small rapids which require careful steering, but can all be steamed through.

The entrance to the Tanjur cataract is narrow and interspersed with rocky shoals, and there is a sandy beach on the west bank where steamers can lie whilst preparing hawsers, &c. The difficulty of passing this cataract is the same as at Ambako, the length of hawser required.

Two fleets of the hawser were made, using for the first one $4\frac{1}{2}$ -inch bow guy, and for the second one 7-inch hemp hawser, 330 fathoms in length.



For nuggers a direct and strong fair wind is necessary.

This cataract was passed at 3.30 p.m., when I proceeded and steamed through the Alem Muleh gate, 1 mile south of Tanjur, securing to the east bank 4 miles south of Tanjur.

The nigger which accompanied the steamer with coal on board, was unable to sail over the cataract, so I left 50 natives with a $4\frac{1}{2}$ -inch hawser to tow her, and afterwards heard she had been too much damaged to proceed.

3rd October. Proceeded at daylight and steamed to the foot of the Akasheh gate, starting again shortly afterwards and steaming over with considerable difficulty.

The river between Tanjur and Akasheh becomes more open, but is still swift and rocky.

2 p.m. took in wood at a station 4 miles south of Akasheh on

the west bank, and arrived at the foot of the Dal Cataract in the evening.

4th October. Discharged all stores, ammunition, &c., to nigger 48b, which I had obtained from Dal, and lightened the ship in every possible way; proceeded under steam at 10.30 a.m. by the western channel and arrived at Dal at 1 p.m., having experienced considerable difficulty in steaming over the large gate of the cataract.

For a good steamer, the Dal Cataract should not be considered difficult, but the pilots say that the western channel will be closed by about the 20th instant.

I consider that should it be necessary to haul a steamer over by the eastern channel, it would be attended with extreme difficulty, the current being very swift, very long hawsers being necessary, and there being very bad ground for working and loading hawsers.

5th October. Proceeded at daylight and took in wood at Sai Island, and stopped for the night at the village of Abûdieh on the east bank.

The river after leaving Dal entirely changes in character, becoming broad, an average width of 600 yards, free from rocks, and both banks become populous and cultivated, increasing in both respects further to the south.

6th October. Proceeded at daylight, taking in wood at the village of Aguih and also 6 miles south of Tinari, where I remained for the night.

7th October. Proceeded, stopping at the foot of the Kajbar gate to lighten the ship, afterwards steaming over without difficulty, taking in wood at Kajbar, and proceeding with the nigger in tow for 5 miles further to the south.

The gate of Kajbar is formed by a chain of low rocks stretching across the river, with two passages through them, one of which can be steamed through at low Nile, and the other which is more narrow, can be used later, using a guy from the east bank.

The river after leaving Kajbar travels about 7 miles to the north-west, making a bad reach for sailing boats; again turning to the southward at the village of Marakut.

From Marakut to the Shaban gate, the river is narrow, rocky on both banks, and formed by rocks and islands into a succession of small rapids.

The Shaban gate consists of a series of rapids running through a chain of small islands and rocks, and though it can be steamed through, requires careful steering.

There is a smaller gate on the west bank, which pilots say can be used by steamers till the middle of November, but guys must be used.

Arrived at the foot of the Hannek Cataract at noon, where, the

men not being ph_____ for the remainder
of the day.

8th October. 1 _____ steamed through
the Hannek Cataracts. This cataract
consists of a mass _____ tending for about
3 miles; the channel requiring very
careful steering, _____ present would cause
little difficulty to a good steamer.

I stopped 2 miles south of the cataract and took in wood and
stores, proceeding again till sunset and reaching Dongola at
11 a.m. on the 10th instant.

I leave here to-day at 1 p.m. taking Sir Charles Wilson as far
as Merowi.

I have, &c.,

(Signed) RICHARD POORE,
Lieutenant, R.N.

APPENDIX 28.

(See page 102.)

CAMEL CORPS EQUIPMENT.

MOUNTED INFANTRY CORPS.

Camel Equipment, &c. Marching Order.

1. *The Soldier*.—The mounted infantry soldier will carry on
his person :—Haversack, water-bottle, waist-belt, bayonet, rifle
and sling, bandolier with fifty rounds of ammunition.

2. *In Sulleetah*.—Sulleetahs will be passed over the saddle-
tree, and covered by red leather saddle cover.

Near Side.—1 shirt, 1 towel, soap, cleaning things, knife,
fork, spoon, holdall, 1 pair pantaloons, 50 rounds ammunition,
cavalry canteen.

Off Side.—3 days rations, viz., 3 tins Kopf soup, 3 lbs. tinned
meat, 3 lbs. biscuit, 3 days' tea, 3 days' coffee, 3 days' sugar, 50
rounds ammunition.

3. *Water*.—"Skin," to hold six (6) gallons, to be attached to
the back of saddle and to lie on the camel's back. The evap-
oration and moisture to be kept from the camel by means of a
waterproof cloth.

Egyptian leather "water bottle" to hold two quarts, will be attached to the cantle on near side.

Total water, $6\frac{1}{4}$ gallons, and allowing 25 per cent. for wastage, $4\frac{1}{4}$ gallons for 3 days' consumption, exclusive of the regulation water-bottle.

4. *Saddle*.—The saddle to be of the Egyptian pattern, as approved, with Namaqua rifle bucket attached on off side as for horse equipment.

5. *Picketing Gear*.—Each camel will carry an iron picketing peg, rolled up on one side of the tent under saddle cover. Head rope is always attached to the head stall.

6. *Tent*.—It is supposed to carry one *tente d'abri* for each two men, which will be carried upon one camel. The tent being divided into two parts, rolled round the poles, and carried upon either side under the saddle cover, these attached to the saddle-tree sufficiently low, so as not to interfere with the grip of the man's knees when astride the camel. The necessary guys, iron pegs, and small iron mallet will be contained in a small bag to be rolled inside one portion of the tent.

7. *Whip*.—A leather whip which will be issued to each man, with leather loop to fasten to pommel of saddle-tree when not in use.

8. *Knee lashing*.—A self-acting knee lashing will be attached to the pommel of each saddle in accordance with a special pattern.

9. *Head stall and hand rope*.—Head stall and guiding rope, used also as a head rope, will form the equipment of each camel.

10. *Nose ring*.—In addition to the above-mentioned in paragraph 9, a small supplementary rope should be attached to a nose ring in case of a refractory or frightened camel.

11. *Forage*.—Three days' grain will be carried in a small bag on either side of the wither of the camel attached to the pommel, viz.:—10 to 12 lbs.

It is estimated that sufficient grazing for camels to supplement the grain can always be obtained, and that the brackish water which is procurable at most wells in the desert will answer for watering purposes.

12. *Tripod*.—A wooden tripod with three legs to keep the water skin from contact with the ground will have to be added to the above kit.

N.B.—*Camp kettle and fuel*.—One Torrens' camp kettle will be carried for every eight men, and the fuel ration distributed among the men of each mess.

Blanket.—A blanket will be carried, but no great coat, and will be rolled and strapped to the front of the saddle, clear of the pommel and above the corn sacks.

(Signed) E. H. HUTTON, Major.

Abbasiyeh, 9th August, 1884.

M

*Notes for the use of Camel
Rigiments by the U.S. Army
in Egypt.*

Who	Detail of Articles.	Weight.
		lbs. oz.
On Soldier	<i>Arms and accoutrements.</i> —Waist belt, bandolier, 50 rounds, rifle complete, bayonet and scabbard, water bottle full, haversack ...	22 4½
"	<i>Clothes.</i> —Helmet, frock, shirt, breeches, braces, socks, boots, garters, drawers... ..	10 15¼
	Soldier of average weight... ..	150 0
In Sulleetah	Shirt, towel, holdall complete, polishing brush, tin of grease, pair of pantaloons, Glengarry cap, cavalry canteen, pair drawers, 100 rounds	25 0
	3 tins Kopf soup, 3 lbs. tinned meat, 3 lbs. biscuit, 3 days' tea, 3 days' coffee, 3 days' sugar, 3 days' salt	6 8
On Saddle	6 Gallons water in skin and Egyptian water bottle	57 0
	Saddle	68 0
	Tent and tripod for water skin	23 0
	2 Head collars	4 0
	3 days' grain for camel	30 0
	Blanket for soldier... ..	4 0
	Total weight carried by camel	<u>400 11½</u>

NOTES FOR THE USE OF CAMEL REGIMENTS BY THE GENERAL
COMMANDING IN CHIEF IN EGYPT.

The duties and functions of the soldiers of these regiments are entirely different from those of cavalry or infantry mounted on horses.

The cavalry soldier fights on horseback. Infantry soldiers mounted on horses fight dismounted, but within easy reach of their horses, upon which they retire if hard pressed, or which can be brought up to them, if required for pursuit.

They can get rapidly into the saddle, and advance or retire at a gallop.

The soldiers of the Camel Regiments will fight only on foot. They are mounted on camels only to enable them to make long marches. The camel is a good traveller; but he is a slow mover.

He cannot be managed as easily as a horse, and he cannot be mounted, or dismounted from, with great rapidity. The men of the Camel Corps must therefore trust solely to themselves and their weapons when once they have dismounted for action.

This cannot be too strongly impressed upon the men. If we have to fight in the Sudan, we must expect to meet an enemy far outnumberring us, and who may at first charge recklessly home, apparently regardless of the intense fire we bring to bear upon him.

His arms are immeasurably inferior to ours, and to hurl back with heavy loss any such rush of undisciplined Arabs, we have only to keep in close formation that will give him no opening, while at the same time it enables us to give full development to our fire.

The attack formation for infantry of our Drill Book is not intended to be employed against an enemy like the Arabs of the Sudan. It is designed to enable infantry to advance with the least possible loss over ground swept by a heavy fire from guns and rifles of an enemy as well armed and disciplined as ourselves, against whom an advance in close order would be impossible.

In acting against Arabs who are indifferently armed and bad shots, the open formation of the Drill Book is not necessary.

We can fight in close order which will enable us to reap all those advantages which discipline gives us against an undisciplined enemy. In deciding what the tactical formation of the Camel Regiments should be, we have two cases to consider:—

(1.) When we have ample time to make preparations previous to an advance upon the enemy's position, or his advance upon ours.

(2.) When we may be suddenly attacked. In the first case, the invariable rule will be that as soon as the near approach or presence of the enemy in force is known, the men will dismount* and either at once form their camels up, as hereafter described, or advance, leading them to the point selected for them to remain at.

It will be for the officer directing the movement to describe at what point the camels shall be left behind. It may be that for some distance they should be led by the men on foot, but so sudden is the Arab attack that the men should never be taken mounted over any ground where attack upon them is apparently possible.

As soon as the point is reached where the camels are to be left—and this point should, if possible, be where some undulation of the ground screens the camels from the enemy's view—the following arrangements must be made for their protection:

The camels should be placed close together, each camel having both legs securely fastened, so that he cannot rise. A guard, not exceeding one fourth the total strength previously told off under one or more officers, will remain with the camels of each regiment. As soon as the regiment advances, the officer commanding the guard will personally inspect the camels, and see that their legs are securely tied, and will form his men into one or more rallying squares, two deep, close to the camels. Care must be taken that these squares are placed so as to afford the best protection to the camels, and so as not to be liable to fire into each other.

The officer commanding the guard must also keep his men thoroughly acquainted with the movements of the main body, so that they may never fire in that direction.

In the event of more than one of the Camel Regiments advancing to attack or meet the enemy, a field officer will be told off to command all the guards left to protect the camels, and he will adopt such measures in their disposition into squares as he may consider best.

In the second case, that of our being suddenly attacked, the men must at once dismount, tie the legs of their camels, and

* In dismounting the camel must always be made to lie down, to avoid the danger to the man of rupture in jumping from such a height.

fight, either in close order, two deep surrounding the camels, or in two-deep squares at the angles of the square oblong formed by the camels.

It follows from the above that the officers commanding regiments should train and practice their men:

- (1.) In rapidly dismounting after closing up their camels, and in rapidly and securely fastening the camels' legs.
- (2.) In advancing on foot in columns ready to form two-deep square at any moment.
- (3.) In moving in all directions when in square.
- (4.) In rapidly forming squares in such a manner as best to protect the camels.

At night the bivouac of a regiment or detachment will be formed so as to afford the greatest possible protection to the camels, every precaution being taken against surprise.

There are several modes of collecting the camels together in a column to enable the men to form round them conveniently for their protection. The camels may be made to lie down in column of about 40 camels in each row (that is in rows of the number of men supplied by each individual regiment or battalion), or in rows of 20 or 25 camels. The camels may be made to face to the front or rear, or they may be made to face either flank. The following calculations may be useful as rough guides to the extent of ground occupied by columns of camels in various formations.

- (a.) A column of 400 camels 40 in a row, facing the front or rear, and close together without any interval, will have a frontage of 130 feet, and a depth of 100 feet, allowing 21 inches as the distance between the rows.

The perimeter of the column will be 460 feet or 28 running inches to every file.

For a bivouac the camels might be more closely packed.

- (b.) If in this same column the camels facing to the front or rear be allowed an interval of 21 inches between each, and if the rows be closed up as much as possible, the frontage will be 200 feet, and the depth 82 feet, giving a perimeter of 564 feet, or 34 running inches to each file.
- (c.) If the columns be similarly formed as in (b), but with double the number of rows, and half the number (20) of camels in each row, the frontage will be 100 feet, and the depth 165 feet, giving a perimeter of 530 feet, or nearly 32 running inches to each file of men.
- (d.) If the 400 camels, in 10 rows of 40 camels each, be placed with their heads towards either flank, the camels close together, one behind the other, the frontage

will be 330 feet; and, allowing addition of 21 inches between the rows, the depth will be 50 feet, giving a perimeter to be defended of 760 feet, or nearly 46 running inches to each file of men.

- (e.) If a column of 400 camels be similarly formed with 20 rows of camels instead of 10, the frontage will be 165 feet, and the depth 100 feet, giving a perimeter of 530 feet, or one file to about every 32 running inches.

With parties of less than 400 camels, it will not be possible to form the men two-deep round them. The best plan with any smaller number will be to form the camels into a closely packed square, with the men formed into two small squares at the opposite end of a diagonal, as one would place two bastions to a square redoubt. If the number of men is under 80, they should form one square only, as small squares of under 40 men each, are not advisable. For very small bodies of men, a desirable formation might be to form the camels into a hollow square, the men remaining inside the square and firing over the camels.

(By order),
(Signed) REDVERS BULLER,
Major-General.

27th October, 1884.

APPENDIX 30.

(See page 108.)

ORGANIZATION OF THE CAMEL BATTERY, 1/1 S.D., R.A.

Table showing the approximate weights carried by the different camels.

		Gun and Stores.	Saddles.	Rations.	Mounted Men.	Total.
		lb.	lb.	lb.	lb.	lb.
Guns, breech, camel	..	228	120	33	170	551
„ muzzle „	..	217	120	33	170	540
Carriage trail „	..	214	120	33	..	367
„ axle „	..	180	120	33	..	333
„ wheel „	..	200	120	33	..	353
Ammunition „	..	220	120	33	170	543
Artificers' tools „	..	120	120	33	170	443

The average weight on the baggage camels carrying men, was about 400lbs. All the gun stores with the exception of a few entrenching tools were taken up.

Relief was given to the gun camels by making the drivers walk a certain portion of the way, the strongest camels were selected for this work.

The load on the ammunition camels, although heavy, was so compact and well distributed that they could carry a man without difficulty.

The first three lines were arranged as follows:—

For each Sub-division.

1st line.—Gun, carriage, two boxes of ammunition on six camels, three natives mounted on gun, breech-gun muzzle, and ammunition camels; this gave one native to every two camels. No. 1 was mounted on a camel.

2nd line.—Nos. 2, 3, 4, 5, 6 and one native mounted on camels.

3rd line.—Five ammunition camels, Nos. 7, 8 and 9, and two natives mounted.

The 4th line consisted of spare numbers, stores, artificers, &c.

Table showing the distribution of Camels, Europeans and Natives.

	Camels.	Europeans mounted.	Native Drivers.
Guns	12	..	12
Carriages	14	..	..
Wheels, &c.	7	..	..
Ammunition, 1st line	6	..	6
Detachment, Gunners	36	30	6
Ammunition, 3rd line	30	18	12
Artificers' tools	3	3	..
Spare stores	3	3	..
Forge, charcoal, line gear for camels, veterinary medicines	3	..	1
Ration camels	4	..	1
Riding camels, officers'	7	7	..
" " Egyptian officer and interpreters'	2	..	2
Riding camels, non-commissioned officers' and trumpeters'	10	10	..
Surgeon's stores	1	1	..
Remaining men and spare	23	15	7
Office	1	..	..
Totals	162	87	47

APPENDIX 31

POSITION OF WHALER

STATEMENT of number of cases of provisions for Whaler Boats
also showing the number sent forward to Sarraṣ,

	Preserved meat.			Preserved fresh meat, 43lb. cases.	Bacon cases.	Boiled mutton cases.	Cheese cases.	Biscuit.		Flour.		Pickle cases.
	60 lb. cases.	54 lb. cases.	49½ lb. cases.					Navy, 35 lb. biscuit cases.	Cabin, 30 lb. cases.	60 lb. cases.	40 lb. cases.	
Numbers of cases to be placed in each boat	1	10	4	4	4	1	4	22	8	2	2	2
Total received at Halfa	399	1766	737	...	217	...	...	2959	1200	331	364	119
Number of boats complete	399	176	184	...	54	...	...	134	150	185	182	59
Number of cases sent on to Sarraṣ	120	...	213	...	...	..	...	280	170	105	...	119
Advised by way bill as on the way from Assuan	...	706	984	59	67	...	397	4355	158	465	250	81

(See page 115.)

STORES, OCTOBER 28TH, 1884.

received at Halfa between the 14th and 25th of October, 1884,
and advised as being on the way from Assuan.

Jams and marmalade cases.	Tea cases.	Preserved vegetables.		Lime juice.		Erdswurst cases.	Cocoa and milk cases.	Vinegar cases.	Rice, oatmeal, yeast powder, and pepper.	Tobacco.	Soup.	Matches.	Medical comforts.	Sugar.	Salt.
1	2	1	1	3	1	2	1	1	2	1	1	1	1	4	1
46	543	265	...	774	350	374	...	54	430	...	256	...	...	585	243
46	271	265	...	259	350	187	...	54	215	...	256	...	...	146	249
...	...	179	...	...	...	...	...	...	118	...	...	...	...	341	240
24	133	235	...	414	60	104	...	667	359	140	140	...	98	3	...

APPENDIX 32.

(See page 116.)

ORDERS FOR TROOPS IN BOATS ISSUED PREVIOUS TO THE ADVANCE
FROM GEMAI.

1. In each boat, 1 man will be appointed coxswain, and have entire charge of managing the boat.

2. The officer or non-commissioned officer in command of the men in each boat will render the coxswain every assistance, and anyone going counter to the coxswain's advice will understand that he is taking upon himself a responsibility which may possibly affect the safety of the whole party.

3. Officers commanding companies will not allow, under any pretence whatever, any person not belonging to the expedition to be carried in the boats.

4. No one, under any pretence, is to be allowed to sit on the gunwale, and all must learn to sit steady, moving as little as possible, particularly when the boat is in rapid or rough water. When under sail the sheets must never be made fast, but always be held in the hand.

5. The greatest possible care is necessary in loading or unloading the boats to prevent their being injured.

6. The arms must always be taken out of the boats before they are hauled through rapids or difficult places.

7. If a boat should be upset, everyone must recollect that it is of the greatest importance to strike out directly one is in the water. In the words of the Dongola swimmers, "commence fighting at once, then the eddy is nothing."

8. Officers commanding detachments of boats will keep their boats together, and use every endeavour to accelerate the rate of progress. Every day should show an improvement in this respect. Such officers and men as may possess previous knowledge should be divided among the crews, and a system of coaching established. All should take their turn at the oars, but sergeants should not be employed tracking.

9. Officers commanding detachments will keep a journal of their route, entering the exact hours they start every morning, the hours they halt and start again, the time they reach their halting place for the night, giving the name of the place, or its distance from a named place, the state of the current, the weather, &c., whether they used oars, tracking lines or sails during the day, &c.

10. Officers commanding companies will be required to give

a receipt for all the stores, equipment, &c., in their boats, and be held responsible for them.

11. All officers belonging to the force will be most careful to impress upon those under their command the necessity of cultivating the good will of the voyageurs and natives attached to the expedition.

12. Lord Wolseley will hold all officers directly responsible that the natives on the way up to Dongola are not interfered with, but that they are properly paid for any supplies they may offer, and that their crops and trees are not damaged.

Any case of ill-treatment of natives, of interference with their women, or of damage to their property or crops, will be most severely dealt with.

13. Throughout the country fuel is scarce, and must be economised as much as possible. Any obtained from natives must be paid for by an officer, and not by an interpreter.

14. Great care must be taken not to set fire to dry grass on the bank, and all fires must be extinguished at night, or before quitting bivouac.

15. Officers commanding are held responsible that all proper military precautions are adopted at bivouacs, and that all lines and gear of boats are always kept properly coiled and stowed, and in working order.

By order,
(Signed) REDVERS BULLER, M.G.

Halfa, 29th October, 1884.

APPENDIX 33.

(See page 120.)

DIARY OF HEAD-QUARTER HALF-BATTALION, 1ST BATTALION SOUTH STAFFORDSHIRE REGIMENT, PROCEEDING FROM WADY HALFA UP NILE TO ABU FATMEH.

6th November.—Left Gemai in 33 boats at 9.15 a.m. First boat arrived at Sarras at 3.15 p.m., others arrived in quick succession except two, which lost their positions and arrived after 5 o'clock. One sail only used, boats hard to pull being so high out of the water.

7th November.—Had all boats cleared out immediately after réveille and thoroughly washed and cleaned. Two rudders repaired, rudders appear weak at the joining, and an iron batting right across would, I think, be a great improvement. Spare rudders would be a great advantage in each boat, I have none. Immediately after breakfast commenced to draw whaler boat rations; drew 29 complete sets and divided them equally in 33

boats, except one boat, which was left with smaller cases to admit of the Medical Officer's panniers, and for him to accommodate a sick man if necessary. The drawing of boat rations took from 8 a.m. to 12.30 p.m., there being only two issues at the Commissariat, and consequently could not be drawn as I intended by companies; and if the stores were stacked in the Commissariat yard by sets, and not as at present, the sets could be counted over to the boats at once and taken away and packed. This would take about one-third of the time. Had dinners at 12.30 p.m., packed boats immediately after, then drew eight days' Commissariat rations and issued them to companies which had to be issued to boats. The boats when loaded with boat rations have quite sufficient room, but the eight days' Commissariat rations being of a very bulky class, and not packed the same as the others, take up a great deal of top room, and interfere much with the use of the oars. Got under weigh at 4 p.m., and made about 4 miles. Bivouacked at El-Arut on the right bank. When getting under weigh boat No. 72, F Company, got broadside in the stream and drifted on to No. 104, F Company, which had just got under weigh. No. 72 was stove in and had to put back and unload, did not come up; used both sails, sailed and pulled much better loaded than unloaded.

8th November.—At réveille, thermometer registered 61°. Breakfasted at 7 a.m. Got under weigh at 8 a.m.; no wind; had both sails up, they did not draw. Found the rapids at El-Arut very difficult, and most boats being unable to use more than four oars, could make but little way. Several narrow escapes of being drifted on to the rocks. On getting near the rapids of Dar al Honir, found could not get through without towing. Disembarked all men except voyageur and one man, and tracked over the rapids on the left bank. When the first boat had got over, I stopped to allow all others to come up, and prepared dinners. Got under weigh by companies a little after one o'clock, rapid very strong, wind light. Got up to the first of the Semneh cataracts about 3 p.m. At once disembarked all men and tracked over the first and second Semneh rapids, putting two voyageurs into each boat. Brought up into slack water, worked until dark and then had eight boats below the first rapid. Left them there with their boats' crews and a guard for the night. Six boats which kept too much to the east channel got into difficulties and had to bring up in the slack water on the right bank for the night. One boat, No. 34, got a small hole in her and a rudder broken. Bivouacked each party with their own boats.

9th November.—At réveille, thermometer registered 59°. I sent over pioneer serjeant with the tool chest, and the Captain of the Company to which the boat No. 34 belonged. She was unloaded, hauled up on the bank, and repaired, reloaded, and

crossed over, as well as the other five, and joined the remainder. Immediately after daybreak the eight boats left below the first rapid were brought up, following repairs carried out:—

No. 34	boat.	Repair ridge roll, and repack bottom.
" 48	"	Repair rudder.
" 58	"	"
" 62	"	"
" 70	"	"
" 150	"	Seams closed.

At the first rapid, Kadingara, there are two nuggers, Nos. 31 and 70, wrecked. One a large one (31) containing hospital and Commissariat stores, an Ordnance Store Officer on board with five men of different corps. At the second rapid there is one wrecked, No. 27, containing stores for the Egyptian Army. At 8.45 a.m. commenced to track by companies over the long rapid reaching up to the front of Semneh. When two companies were up, crossed them over, and they at once commenced to unload all stores and baggage, except about 1 ton left in each boat. The boats were passed over the Semneh Gate, each containing about 1 ton of its boat stores, under the orders of Captain Hammill, Royal Navy, and pulled over by soldiers of the Egyptian Army. Boats' crews portaged over the remainder of the stores and baggage. This was completed at 5 p.m. when the other two companies commenced unloading. Bivouacked at Semneh. Have to leave three men here sick, one dysentery; one, band boy, fever; one sore eyes. The other half-battalion left one sick with bad eyes.

10th November.—At réveille thermometer registered 58°. F and H Companies, partly loaded boats last night, completed this morning. First boat H Company got under weigh at 8 a.m. and followed in succession, then F Company. B and C Companies commenced portage immediately after réveille, and the boats commenced to be hauled over the gate at 7 a.m. by Egyptian soldiers under the orders of Captain Hammill. Boats all passed round at 9.15 a.m. Portage completed at 10.15 a.m. and commenced to reload; loading completed at 11.45 a.m. In hauling round, two voyageurs were in each boat, and 90 fathoms of line used. Dinners at 12 noon. I started in boat at 12.30 p.m., the remainder followed in succession by companies. Made for east bank and had to get out and track. No wind, and currents strong round the point. Crossed in the boats the arm of the river to the next point and made a long track. Currents round both these points very strong. Impossible to pass them with no wind. It could be done I think with a good wind. After rounding, drifted to the west bank, touched the bank at the north end of the western passage of the Island of Misker. A strong rapid here; most difficult tracking. Then ridges of sunken rocks project at the point, and the lines required much

labour to free them from the sunken rocks. Found two boats here that had left in the morning. Brought up in slack water opposite the south end of the island. Three boats tried to track up the west side of the island but had to bring up and stay there. I remained for all my boats to come over at this difficult spot, and bivouacked.

11th November.—Thermometer registered 56° at réveille. Breakfast at 6.30 a.m., and I left, tracking, at 7 a.m. Current strong, no wind, boats followed in succession. When clear of the current at the south of Misker, crossed to right bank, tracked round a strong point, then drifted on to the west bank opposite Kidin Kalo. Here had to track round a strong current. In smooth water found my two companies that had left Semneh yesterday morning. Rowed to the first of the Atir rapids, and tracked all of them. On west bank was two hours clearing Atir, then rowed; wind of no use. Had nearly two miles smooth water, then a strong current. Got out line, and commenced tracking. At 11.20 a sad accident. Serjeant Hayward, the officers' mess serjeant, was in rear of the tracking party, they were on slippery high rocks, deep water quite close, a strong current. He got on the wrong side of the line. I saw it, and called to him. In a second the line was made taut by the force of the water, and caught him across the legs. He slipped into deep water, and although a good swimmer, lost all control and went down. He was an excellent non-commissioned officer, and a most valuable man as mess serjeant. Had to track for some time, and pulled up in the first slack water I found at 12.15 p.m. A very hot day, and no wind, and tracking was hard work from the heat, and uneven banks. Left with all the boats that were up, and tracked for some distance, then crossed over to the east bank of the Ambako rapids. Hauled over the first rapid before dark, and bivouacked. Two companies still in rear, no repairs required.

12th November.—Thermometer registered 51° at réveille. Breakfasted at 6.30 a.m. Left, tracking, at 7.30 a.m. One company joined as I was starting. After tracking for about 500 yards on the east bank, rowed across to the west; found good water for some distance. Current strong, and no wind. Had to track some points. Tried the second rapid on the west side, found it impracticable, and had to cross to the east, and then after hauling for some time pulled up for dinner abreast the north end of the first of the three islands in Ambako rapids. Boat No. 15 got on a sunken rock near a small island close to the west bank, when drifting across. She signalled "sinking and unloading." I ordered her by signal to take out everything, and haul up on the island and report damage. She reported two holes in her bottom, but repairable. I lightened the pioneer serjeant's boat and sent him with a chest of tools to carry out

the repairs. After dinner continued tracking up the right bank towards Ambako. Only got ten boats over second rapid before dark. It took 40 men on each boat; strong party in three places on the line. The rudders found very faulty and dangerous. One rudder-head smashed off in the middle of the rapid, and the boat went on broadside. She was brought up after a few seconds by the voyageur using an oar. Had five rudders broken to-day.

13th November.—Thermometer registered 49° at réveille. Commenced getting round the remainder of the boats immediately after réveille, and moved on by companies in succession to Ambako. By 12 o'clock had got 19 boats over 2nd rapid. Boat No. 54 in the middle of the rapid would not answer to her helm; it had been repaired; was very bad; she turned broadside on, shipped a large quantity of water, turned over. Two voyageurs held on to the boat and got on her bottom when she turned up. I ordered the hauling line to be slackened off quick, but not let go, and the boat drifted down the rapid and into slack water. The men remained on her, we threw them a rope and hauled her to the bank. The boat is not damaged except in her fittings; one mast broken right across, not repairable; two seats completely smashed. I sent down all men with officers along the bank for a considerable distance, picked up all stores that floated in, had an inventory made of all deficiencies—nine rifles, nine sets of equipment, nine valises with kits, two rolls of blankets in waterproof sheet with great-coat and serge suit inside. I have ordered in future that at any difficult place the arms, equipment, spare ammunition, waterproof rolls, cooking utensils, and rations in use, are to be portaged. Assembled boards to report on losses by boat No. 54 turning over; also to report on two boxes of Nile stores lost over side of No. 11 boat in a rapid. Boat No. 71 later on also refused to answer to her helm, which was broken; got a hole in her and made much water. Had her unloaded, hauled up for repairs. By dark got 17 boats over the first gate, and bivouacked between the first and second. Left pioneer serjeant with tool chest and carpenters to carry out repairs to Nos. 54 and 71. No. 15, that had got on the island on the 12th, rejoined, quite repaired, no losses.

14th November.—Thermometer registered 45° at réveille. Continued passing over the second gate after breakfast, bringing up on the east bank under the commissariat stores. Here remained for the day to complete all repairs to rudders and overhaul the hauling lines, one of which smashed yesterday in a strong rapid. Lines got under rocks, which are hardly visible, and got injured. Great attention is necessary on this account. Boat No. 15, which got injured on the 12th, was in charge of one of the voyageurs who had made the experimental trip under Lieut.-Colonel Alleyne. He states the river is some feet lower now,

and that he passed over the same place quite clear before. Had not got over the third gate one company when it got dark. Found Boat No. 54 leaking badly, so had to unload her. Her seams appeared to have been forced when she turned over. Had new seats put in of temporary timber, mast spliced, and made her serviceable. Found Boat No. 24 leaking badly; seams opened; had her emptied and turned over. Lord Avonmore with three Nile boats, going up the river to examine the rapids, came up to the third gate in the evening. Steam launches, No. 102 and 104, passed through proceeding up the river. The Ambako Cataracts and Rapids extend for nearly five miles. The hauling in the present state of the river is for a greater distance, as the lines have to be carried over points of boulders stretching out for a long distance where the water now is, and in some places the men have to strip to pass them over shallow arms of water running into the banks. During the whole of the Ambako reach at least 20 men must be on the line, in consequence of the long line that has to be out and the strong currents round the points. At each of the gates at least 40 men have to be distributed at the points along the lines, to prevent accidents. At the first and third gates, side lines are necessary. The portage for arms, equipment, &c., at the first gate is for about 500 yards, at the last gate for about half a mile.

15th November.—Thermometer registered 47° at réveille. Continued moving nine boats that were still below the upper gate. Drew four days' rations from the Commissariat. Completed all repairs. Had all the hauling lines examined as several got cut on the rocks. Got all boats over at 2.30 p.m. Boat No. 54 that had capsized, leaked very much in being hauled over the cataract, had her emptied, turned over, and found several of her seams started. Left the pioneer serjeant in charge to carry out repairs, also another boat to keep company, as at most of the points two boats' crews are necessary to haul over. Started at 3 p.m. Boat No. 60 struck on a sharp rock just after starting; it was not visible, and there was very deep water at both sides. She was making much water; had her hauled in and emptied and left behind for repairs. Found all the points on the east bank very strong currents, and although there was a fair wind, had to haul round them. The second point, nearly abreast of the north of the first island after the cataract, has a strong rapid running round it, and a long reef of rocks hardly visible running into mid-stream. I passed over boats in succession with two voyageurs and nearly 90 fathoms of line; hauled from a point opposite the opening of the rapid. Got over 18 boats before dark. Remainder, except those remaining for repairs, made fast below. Bivouacked.

16th November.—Thermometer registered 55° at réveille. Commenced passing over remainder of the boats immediately

after réveille. Got under weigh at 8.45 a.m. Strong breeze, so kept good intervals to prevent accidents. Had about two miles clear water when under sail, then a succession of strong currents at every point. I led, and tried two of them with six cars and two sails. Strong breeze, could not make headway, had to haul. After clearing all the island crossed over to the west bank, and hauled up for dinner. The clear channel described in Colonel Colville's report, dated 22nd August, 1884, does not now exist. Very many clusters of rocks, a few feet high, are above the water, and the current rushes very strongly through them. After dinner crossed over opposite to the north end of the Island of Tanjur, and bivouacked. It being dark two companies remained on the west bank, also the boats which had been left behind for repairs.

17th November. — Thermometer registered 53° at réveille. When it was light I signalled to all boats on the west bank to continue hauling up on that side. I crossed over with the boats I had on the east bank, and followed the course laid down in a very clear sketch of the west channel furnished to me by Major Crofton of my regiment, who is station commandant at Tanjur. After passing for about $1\frac{1}{2}$ miles along the west bank, crossed to the west bank of the island of Tanjur. Tracked along its banks for about another $1\frac{1}{2}$ miles, then again took the west bank of the main land, and, by hauling and rowing, got up to the foot of the cataract south of the second island. Bivouacked. Had 15 boats up, remainder in different parts along the channel. Channel was most difficult, and the water falling rapidly. I had five boats injured from hidden rocks, with deep water on both sides of them. Companies of my other half battalion passed up three days ago without any difficulty. I had no wind. This passage is nearly 5 miles long.

18th November. — Thermometer registered 52° at réveille. Boats in rear continued moving up and, as they arrived, unloaded arms, equipment, ammunition, spare stores for portage. When I got 22 boats up, commenced to pass them over the cataract which, in the present state of the river, consists of four cataracts in succession, and all of which are more or less dangerous from the hidden rocks very little below the water. Boat No. 153 stuck in the centre gate and took in a quantity of water, resulting in the loss of some cases of Nile stores. She was partly unloaded. Got 18 boats, without any other accident, over before dark. Seven boats still not out of the passage. Remained in the same bivouac. Placed a guard over the boats which had passed through.

19th November. — Thermometer registered 55° at réveille. Portaged, immediately after réveille, stores, arms, equipment, &c., of boats which had passed over. After breakfast passed over 11 more boats. Five of the seven which were in the passage, came

up in the early morning. The five boats injured in the passage had to be turned over, which caused great delays in repairs, as I have only two carpenters in this half battalion. Moved to the head of the cataract. As three boats were still in the western passage and under repairs, I bivouacked.

20th November.—Thermometer registered 50° at réveille. Communicated with boats in the passage by signals, and, as the repairs were completed of those that I had passed over, I ordered all boats of two companies to move on in succession. I remained to see the remaining three over the cataract. This was done by 12 o'clock. Two of them were still leaking; I ordered them to be unloaded, turned over, and left a carpenter to carry on the repairs, also a third boat to keep company. After leaving Tanjur, there are strong currents rushing through high rocks standing across the river. The passage between the two western rocks is the best; requires hauling. About 500 yards further on there is a point on the west bank, which has to be hauled round, and with a long line, as the rocks project for some distance. After that point, crossed to the east side. There was then a clear run up to Sonki, without any obstacles; with a good wind, would be got over in a very short time. I had very little wind; had to use oars as well as sails. Hauled over Sonki, which is a very slight rapid, only two points about 50 yards apart. Got up to Okmeh on the east bank and bivouacked. Here there are some Commissariat stores—cases of biscuit, meat tins, preserved vegetables, in charge of a guard of the Egyptian army, who state the stores were placed there by an officer whose nugger was wrecked. There was one 10-lb. tin of tea, which I took at Tanjur; could only give me two days' grocery rations, and four days' meat and biscuit. The following repairs had to be done from entering Tanjur, western passage, until clear of its cataract: No. 67 hole in bottom from sunken rock; No. 68, ditto; No. 71, ditto; No. 82, ditto; No. 84, ditto; No. 152, rudder head broken; No. 60, leaky in seams. Boat No. 48 was found to be leaking badly; on unloading her, and turning her up, found her seams along her stern post had opened, and also a great number of her planks had been patched up with white lead; also No. 58 was leaking and on examining her, found her planks were all open, and had been closed with white lead. There is but a very small quantity of white lead in the tool chests, not nearly enough for the numerous repairs required. Two companies not yet up.

21st November.—Thermometer registered 55° at réveille. Got under weigh at 7.30 a.m. Crossed over to the west bank, and hauled over two rapids of Okmeh. They are not difficult, each boat's crew took over their own boat. Continued for about two miles on the west bank. Then found the currents too strong; place is bad for hauling. Crossed to the east bank; continued

along it until we got opposite an old ruin. Crossed to the west bank, and pulled up between the 1st and 2nd islands below Akasheh for dinners. Left, the moment the men had their dinners. Found very strong currents between small islands. Had difficult work in hauling. Passage along the west bank is impracticable; no water, and on the east bank very difficult, owing to the sunken rocks, where the line gets fouled. Got up to the foot of Akasheh at sunset. Bivouacked; only one company had got up. Here received orders from the Commander-in-Chief, through the Commandant at Dal, to push on by companies. This I have been doing all along since leaving Semneh, but at Ambako had to wait for two companies, as less than that number could not get through. Hauling the Ambako Cataract is very hard, and must have strong parties to avoid accidents. At Tanjur there must be at least 100 men on the cataract, as the hauling has to be from four points, with connecting files to keep the line clear from the rocks.

22nd November.—Thermometer registered 65° at réveille. Breakfasted at 6.30 a.m. Got under weigh. Crossed to the west bank at the foot of the Akasheh Cataract. Found the west passage had fallen so much that boats had to be more than half unloaded, and then passed over in pairs, two boats' crews to each boat. Pushed on by companies as fast as they were over, and ordered to halt at 1 p.m. for dinners, then push on till sunset. I remained to see all through that came up, and left at 2 p.m. Passed out all the boats I had started, and got to the head of them just at sunset, at the point of the river on the east bank where the Dal rapids and cataracts begin. Hauled all the boats round that point, although it was dark, by moonlight, and bivouacked.

23rd November.—Thermometer registered 64° at réveille. Got under weigh immediately after breakfast, and commenced hauling up the east bank towards the cataracts. At 9 o'clock had one company up. The second rapid is very difficult, in consequence of the great fall of the river in the last two days. A second company, letter B, joined me here. Two companies, F and C, now in rear. Letter F, I have not seen since Tanjur. Lieutenant Lord Avonmore here took charge to pass companies over cataracts. He required the full strength of two companies to pass over the first cataract. Got letter B up over the second rapid, and before dark passed 11 boats over first cataract. Bivouacked under first cataract.

24th November.—Thermometer registered 62° at réveille. Immediately after breakfast pushed on these two companies, and passed second cataract. About 9 o'clock, letter C company was signalled as coming round the point, in view of Dal waters. I went back, brought the company up, and under their own officer passed them over the first and second rapids. After
(s.c.l) s

their dinners they were passed over the first cataract, under supervision of one of Lord Avonmore's men. At the second rapid, where my other half battalion hauled over without taking anything out of the boats, I had to partially unload and portage round it, as well as hauling the boats through a channel more mid-stream. Lord Avonmore informed me the channels had entirely changed during the last few days. I had to partially unload at each of the cataracts, and portage round them. After dinners, 15 boats were passed over the third cataract, and letter C over the second cataract. Bivouacked above the third cataract and portaged all that had unloaded of B and C from second to third, leaving a guard at the second cataract over the boats of C Company.

25th November.—Thermometer registered 62° at réveille. Immediately after breakfast started H Company, also Quarter-Master's boat, to draw rations, also the doctors, with four sick to be left at Sarkamatto—two dysentery, one enteric fever, and one with badly injured leg by a fall over the rocks. Passed remainder of C Company over third cataract and F over the first before the men's dinners. In hauling over the second rapid, near the first cataract, Boat No. 71, in charge of F Company, stuck on the rapid, where all boats had passed over clear yesterday. Two Canadians in her called to the men to haul, not thinking she was fast. Her stem-post started and came clean out. Lord Avonmore sent an empty boat alongside to unload her. She was then passed into slack water, hauled upon the sand, baled out, and had canvas nailed round her stem. By this means we were able to bring her round to the first cataract, where Lord Avonmore's camp is. I have there left her; divided her crew and Nile stores through the other boats. Her fittings I have taken to replace those of No. 54, which were lost when she was capsized in the Ambako Cataract on the 13th instant. I have since been working No. 54 by borrowing fittings from other boats, but will now complete her. At 2 P.M. started with B Company. I got ahead of them, and close up to Sarkamatto, when it got dark; left orders for C and F Companies to push on when they were over the third cataract. Three boats are now in rear under repairs—Nos. 61 and 62 below Dal, and No. 48 at second cataract. Bivouacked.

Thermometer registered 60° at réveille. Left after daylight; got up to Sarkamatto at 7.45. H Company arrived here last night; took in 15 days' rations this morning and started at 8. B Company arrived at 11 o'clock, took in 15 days' rations, and started after the men's dinners.

PHILIP H. EYRE,* Lieut.-Colonel,

Commanding 1st Bn. South Staffordshire Regt.

SARKAMATTO.

26th November, 1884.

* Colonel Eyre was killed at Kirbegan.

27th November.—Thermometer registered 58° at réveille. F Company came up yesterday afternoon (except Boat No. 48, left with C Company under repairs) ; drew rations in the evening, and left this morning at 8 o'clock. At 1.45 p.m., when I was about to leave Sarkamatto with the head-quarter boats, received report from Captain Broadwood, Commanding F Company, that one of his boats had capsized. I at once left for the spot, which I found about 3½ miles from Sarkamatto, little north of Ferkeh. Boat No. 204, with coxswain in her and man in her bows, was being hauled round a point over a strong current; the line broke; boat drifted on point of sharp rock, which was under the water; stove in a large hole in her star-board side. All heavy things above the seats immediately went over and sank; light boxes drifted down the river. The boat drifted into slack water; a line was thrown to her and she was hauled in, the two men clinging on. All boxes that floated down were picked up on the bank by natives; soldiers were sent along to recover them. Most of the stores were saved. No serious loss, except 11 stands of arms, 11 sets of equipment, 11 valises with kits. Ammunition boxes all saved. I ordered another boat to be unloaded, and was employed until dark with poles and boat-hooks over the spot where the accident happened, but did not recover anything. The boat is being repaired. I bivouacked at the place, and forwarded a report to the Major-General at Dongola.

28th November.—The thermometer registered 61° at réveille. Immediately after daylight, commenced again with an empty boat, my own voyageur, and four men to search round the point where Boat No. 204 heeled over yesterday. After about two hours, felt the sack with the rifles; they were about 9 feet under water. Got them up all safe. Continued searching up to 11.30, but not successful. I sent notification to the Commandant at Sarkamatto that I had got my rifles, and requested him to report it; and asked him, if possible, to have one of the steam pinnaces I saw at Sarkamatto sent out to make further search for the equipment. He sent me word in the early morning that he had sent me 10 Dongola swimmers, but they never arrived. I have no doubt that after another week the river at this point will be low; and, as the valises and accoutrements are heavy, they will remain where they are now, and can be found if searched for by the local authorities. I left with my regimental staff at noon, leaving the Officer Commanding F Company, Captain Broadwood, to see boat No. 204 reloaded, and to proceed with her to the place where the rest of his boats are, and continue his journey southward. Stopped for dinners at the village of Ferkeh. From Sarkamatto to Ferkeh kept to the east bank; the west is not practicable. There being no wind, I was not able to avoid the strong points between

Sarkamatto and Ferkeh; the second, after leaving Sarkamatto, is very difficult and requires great care. It is at the present moment more than a rapid, and is a cataract. It requires a hauling line of 150 yards and at least 30 men at the end of the line to haul straight from the cataract. I here passed the slack line of one boat, made fast to the stern of the leading boat which was being hauled, and thus brought the line to the hauling point, having to carry it round about a quarter of a mile. The whole of the east bank up to Ferkeh has projecting shoals and sandbanks. It can be rowed over with care. After leaving Ferkeh passed over to the west bank. Some boats of my battalion tried the channel between the east bank and the island of Ferkeh; two came to grief (No. 42 and No. 52). These I saw on the banks unloaded when I got round the northern point of the island. No. 42 reported she had the Company's Pioneer, and had completed repairs and was about to start. No. 52 was on a rocky island at the south point of the island of Ferkeh. I crossed over to her, found she had had a large hole in her, that the serjeant in charge of the boat had some tools with him, and that he himself had nearly completed her repairs. I left him what he required and proceeded. At dark I came up to the other boats of letter B Company, under Captain Wylly. One (No. 101) had struck on a rock in a rapid, and was being unloaded by two other empty boats, which had been sent by Captain Wylly to take off her stores. This was abreast of the north point of the island of Mograka. The west bank here is a sandy desert, and it appears to grow a great quantity of high grass, which is made into choppers or screens. The east bank is well cultivated, with several palm-trees and many villages, but the currents are much stronger, and the rocks more numerous. I bivouacked on the west bank. The island of Mograka is cultivated, and a number of palm-trees and a large village on it.

29th November.—The thermometer registered 58° at réveille. Immediately after daylight Boat No. 101 was hauled in, turned over, and the company's pioneer commenced repairs. Nos. 42 and 52 came up and joined their company a little after breakfast. I have given orders that in future at any difficult rapids each boat is to be steered over by the voyageur of the company. F Company, under Captain Broadwood, came up at 10 o'clock. I started with the Staff boats. H Company is now in advance of me. Followed the west bank until abreast of the village of Ginnis, then crossed to the east bank; the west bank is a desert, the east bank is cultivated. The river is clear and the water slack, and deep water near both banks, only a few rocks being visible. The current in the centre is strong. I had good wind and was able to move with both sails. The river, in its present state, is not clear as reported in Colonel Colville's report and the book furnished by the Intelligence Department, "The Nile above

the Second Cataract, Part I. From Sarkamatto for 16 miles." Up to about a quarter-of-a-mile beyond the south end of the island of Mograka it is a succession of strong currents and rapids, with shoals of rocks, and many only a few inches under the water. After that it becomes clear and open. After dinner proceeded, and before dark was clear of two of the Amara rapids which are in a straight line and about 100 yards apart; deep water. The first can be rowed over with careful steering; the second passes between two high rocks about 50 yards apart, and without wind the point requires hauling for a few yards only. The passage then, down to the last islands in the Amara waters, is clear, but many rocks, well above the water; current is strong but nothing very difficult. On the west bank low hills come close in again, cultivation and palm trees on the east bank; small islands and rocks are more numerous on the west bank, I kept to the east bank, and, as it was getting dark, bivouacked at the east point of the last of the Amara Islands. It is about 500 yards long, both ends mere sandbanks, at the centre high, covered with shrubs of different sorts. On first entering the Amara waters a line of willows, several feet above the water, runs straight down the mid-stream.

30th November.—The thermometer registered 63° at réveille. Three companies being in rear, I waited here for some to come up, and at 11 o'clock B Company entered the west channel with seven boats. Reported by signal, "Sufficient water, current very strong." They had a good wind and sailed through it. They also reported that C Company was still south of the island of Mograka with two boats under repair; that F Company was some distance in rear. At one o'clock C Company entered the west channel. I then left and passed through the third of Amara rapids. There was plenty of water, but a very strong rapid. My Staff boats sailed and rowed through it; came up to B Company at north end of the island of Arnitti. This island is well cultivated, with several villages on it; it is about 2 miles long. Passed through the east channel. Saw part of the 19th Hussars on the east bank mainland, this bank has several villages, and is well cultivated. On arriving at the north end of the island of Sai, took the east channel; bank on the mainland here is bare. Sai is well cultivated; a number of palm trees. Got just south of the village of Koyekch at dark, and bivouacked on east bank nearly opposite south point of the island; found no water, but deep mud, on bank of island, so had to cross over to mainland. Sai is about 5 miles long. B Company came from Mograka to the bivouac, making nearly 25 miles in a day.

1st December.—Thermometer registered 60° at réveille. B Company left at 7 A.M.; I remained to get some further report of C and F Companies. C Company came up at 10 A.M., found

two boats, Nos. 60 and 67, leaking badly, No. 60 from an opening in one of her seams, No. 67 from an injury previously repaired, but only temporarily as there was no carpenter available. I had them both unloaded and put a carpenter, whom I kept back from B Company, to carry out the repairs, and left with the Regimental Staff at 1 o'clock as F were in sight. This completes the Battalion through all difficulties north of Hannek. Head-Quarters of 19th Hussars passed my bivouac. The river is clear of all obstacles but the current, which is strong; banks on both sides under cultivation, with palm trees. Villages numerous. The wind was light in the afternoon, and only made about 9 miles up to sunset. B Company is well in front. I bivouacked south of the village of Suarda on the east bank. Villagers brought in supplies of dates and milk freely the moment the boats stopped.

2nd December.—Thermometer registered 49° at réveille. Left at 7 A.M. with Regimental Staff, four boats; wind very light, had to row most of the way; banks well cultivated. Villages numerous. Deep water each side, except close to the banks, where rocks appear, and some mud banks with less than 2 feet of water on them. Current strong up to Dorkeh-Matto, after that water slack. Got up to Waui, on the east bank, at 11.15 A.M., found four large empty nuggers waiting to go down the river, they got under weigh when they saw my boats coming. Found B Company had bivouacked there last night, having made about 15 miles. Less cultivation after leaving Waui, and the hills comes closer in on both banks. On the west, low rocky hills come right down to the water. Halted for dinner at 12.30 P.M. about 3 miles north of Koyeh-Matto. Head-Quarters of 19th Hussars passed me there. After turning the bend of the river to the east of Koyeh, no wind, perfect calm, and very hot. Had to row but did not make much way, owing to the currents. Bivouacked about 3 miles south of Koyeh on east bank. Passed a large nigger with Commissariat Staff and stores on board, also Captain Hamilton and soldier servant to join my battalion.

3rd December.—Thermometer registered 62° at réveille. Left before 7 A.M. No wind, hard rowing against the current; warm morning. Passed whaler with Colonel Butler, C.B., at 8.30 A.M. He gave me orders to push on, which I am already doing, not halting for a moment I can help. He reported Lieutenant Bridge sick with dysentery at Absarat, but that his company had gone on under the colour-sergeant. Got to Absarat at 11.30 A.M., found Lieutenant Bridge with a servant in a tent, very ill, severe attack of dysentery, but not dangerous. I landed the doctor of my battalion, with his servant, to take charge of Lieutenant Bridge, and told him to put him on board the nigger which was in rear of me, and take him as far as Abu Fatmeh field hospital. I left written orders for Captain

Hamilton and soldier servant to transfer themselves to Lieutenant Bridge's boat, No. 107, and push on without any delay. My boats had cold dinners. Had to row all the way and track where the bank was practicable. Got up to the north end of the Island of Dukurati just at dark, and bivouacked on the east bank.

4th December.—Thermometer registered 68° at réveille. Rouse at 4 A.M. Boats had coffee and left at 5 A.M. Clear moon, found very strong currents and several small islands and rocks. Got up to letter B Company opposite Delko at 7 o'clock; they had just started, having bivouacked on the west bank. Halted for breakfast at Delko at 8 A.M., left at 9 A.M. Found very strong currents, wind not sufficient to be of any use, had to haul and row the whole forenoon, and made but little way in consequence of the very strong currents and there being no wind. The points round the Island of Siseh are all strong, with sandbanks in mid-channel. Had twice to cross the river from east to west to make any way. Got to the north of the Island of Ertemri at 2 P.M. and hauled up for cold dinners in the first slack water I found, on the east bank of mainland; was in company with B Company. Started in half-an-hour and found two strong rapids between the east bank and the Island of Ertemri. Got up to opposite the village of Kuki at sunset and bivouacked, having made about 13 miles.

5th December.—Thermometer registered 67° at réveille. Had coffee at 5 A.M., and left at 5.30 A.M. Found yesterday the moon so deceptive on the water that I decided not to leave before 5.30 A.M. Got to the foot of Kajbar Cataract with the leading boat at 8 A.M. No wind, had to row all the morning. Commenced partly to unload as the boats came up, and portage for about 300 yards, crossing two channels of backwater, where the men had to partly undress. Had breakfast cooked, and, after breakfast, commenced to haul over through the west channel. The east channel is quite closed. Boat No. 107, with Captain Hamilton belonging to H Company, joined me here about mid-day from Absarat. Passed over all the boats, 12 in number, by 2 P.M. Men had dinners, and started at 3 P.M. Bivouacked 5 miles south of the cataract on the left bank. Saw six boats of H Company leave Kajbar as I got up there in the morning; they are in charge of a colour-sergeant, and I am anxious, if possible, to catch them at Hannek to put an officer in command.

6th December.—Thermometer registered 52° at réveille. Rouse at 4.30 A.M. Coffee, and left at 5.30. Found very strong currents all up the left bank until the point opposite Faredi, when I found slack water. No wind. Sails of no use. Halted at 8.30 A.M. for an hour for breakfast. Had a light wind from 10 till 12 A.M., then it dropped entirely. At 1 P.M. got up to

Marakut. Found very strong rapid, right across the river, and had to cross to the left bank. Four boats succeeded after hard work in rowing over this rapid; had no wind to assist; hauling was most difficult owing to a long ridge of rocks about 50 yards running into the stream, with deep water rushing between them, so that the line could not be passed without men undressing for the purpose, and then two boats' crews were required to haul each boat. This place would not be difficult if there was any wind; halted for cold dinners, and proceeded when the last boat got over. There is little cultivation on this part of the river, particularly on the east bank, where the desert comes down to the river. About 500 yards after leaving Marakut, came to another very strong rapid, where the river bends towards south-west. Found it impossible to row over it, there being no wind; had to haul each boat over. About 1 mile further on there is another strong rapid on the east bank. Had to cross to the east side just above it. Current very strong, only half B Company's boats got across before it was quite dark. I bivouacked with the half-company across on the east bank, having made about 15 miles, but had no wind, and three rapids to haul over.

7th December.—Thermometer registered 61° at 5 A.M. Finding the remainder of B Company's boats were coming up, I started in company with the half-company. No wind; not sufficient to loosen the sails. Rowed all the forenoon. About 12 noon got up to the narrow part of the river north of Shaban. The currents are all very strong the whole way down to that, and this channel is full of small islands and rocks, well above water. Had to haul three strong rapids, between the left bank of the river and Amandar. As each boat cleared them the men had dinners, and then crossed to the right bank, opposite the north end of the Island of Moslu. Strong currents all the way. Found another rapid to be hauled through. On rounding this point saw two boats of H Company about half-a-mile ahead, one rowing down stream very hard. On getting up to her found a man, Private Fellowes, had fallen overboard. He swam with the current and the boat picked him up. It was then reported to me that a man, Private Reid, of the same boat was missing since last evening, supposed to have been drowned in the rapids. I rowed through in the forenoon. He was last seen undressing by the side of a rock to pass a line. The boats of this company appear to have got separated very much. They were sent ahead from Absarat, under the colour-sergeant, on the 2nd instant, when Lieutenant Bridge was left there sick. A voyageur did not accompany them, and they appear to have had many difficulties. I went along the bank myself for about 2 miles until I succeeded in finding another of them, and stopped her. Crossed to the north end of the Island of Moslu and bivouacked.

8th December.—Thermometer registered 64° at 5 o'clock A.M. Left about 5.15 A.M., tracking by moonlight along the Island of Moslu, hoping to find some other boats of H Company when it got daylight. Crossed to the mainland at daybreak to avoid a strong rapid and several rocks. Hauled up the left bank for a few hundred yards, then crossed to the north part of the island of Simmet. Went along its left bank and got in sight of some more boats of H Company. Sent a signaller to stop them until I got up. Had breakfast cooked at a rapid which had to be hauled, while the boats were being hauled over, and after breakfast sent forward H Company, seven boats complete with their voyageur under command of Captain Hamilton with orders to push on to Hannek as fast as possible. Simmet appears to be in many parts well cultivated, with several villages and large patches of cotton. On reaching south end of Simmet, crossed to a point on the left bank of the mainland in company with H Company and bivouacked.

9th December.—Thermometer registered 65° at 5 A.M. Left as soon as it was daylight. Had a good wind, crossed over under sail to the east bank where the Egyptian camp of portage is. Then found the passage for the cataract was on the left. Crossed over and passed, in succession rowing and sailing. Breakfasted on a small island north of Tumbus Island. Colonel Maurice, Station Commandant at Hannek here joined me, and said he would send his boat's crew to show me the passage, after landing him I waited with H Company's boats. Proceeded up the cataracts, where Colonel Maurice's voyageurs pointed out the course. Found no difficulties, and I do not consider any single part so bad as between Shaban and the Island of Moslu. Arrived with H Company and bivouacked at Abu Fatneh. . . .

PHILIP H. EYRE, Lieut.-Colonel,
Commanding 1st Battalion South
Staffordshire Regiment.

*Camp, Korti,
23rd December, 1884.*

APPENDIX 34.

(See page 120.)

TABLE SHOWING DATES OF EMBARKATION AT GEMAI AND ARRIVAL AT KORTI OF TROOPS IN WHALERS.

Regiment.	Date of embarkation at Gemai or Sarras.	Date of arrival at Korti.
	1884.	1884.
26th Company R.E. (1st half)	November 1	December 10
1st Bn. S. Staffordshire Regt.	" 6	" 17
1 Co. 2nd Bn. Essex Regt.	" 11	" 30
		1885
2 Cos. 2nd Bn. Duke of Cornwall's L.I. ..	" 12	January 1
2 Cos. 2nd Bn. Essex Regt.	" 14	" 1
1 Co. 2nd Bn. Duke of Cornwall's L.I. ..	" 16	" 3
1 Co. 2nd Bn. Duke of Cornwall's L.I. ..	" 17	" 4
2 Cos. & H.Q. Duke of Cornwall's L.I. ..	" 18	" 6
1 Co. & H.Q. 2nd Bn. Essex Regt.	" 20	" 8
1 Co. 2nd Bn. Essex Regt.	" 21	" 10
1 Co. 2nd Bn. Duke of Cornwall's L.I. ..	" 22	" 10
2 Cos. 2nd Bn. Essex Regt.	" 23	" 2
1 Co. 2nd Bn. Duke of Cornwall's L.I. ..	" 25	" 3
1 Co. 1st Bn. Royal Highlanders	" 27	" 6
2 Cos. 1st Bn. Royal Highlanders	" 27	" 11
1 Co. 1st Bn. Royal Highlanders	" 30	" 13
1 Co. 1st Bn. Gordon Highlanders	December 1	" 7
1 Co. 1st Bn. Royal Highlanders	" 2	" 14
1 Co. 1st Bn. Gordon Highlanders	" 7*	" 17
1 Co. 1st Bn. Royal Highlanders*	" 10	" 11
Naval Brigade (1st half)†	" 12	" 5
3 Cos. 1st Bn. Royal Highlanders†	" 13	" 13
1 Co. 1st Bn. R. West Kent Regiment† ..	" 13	" 23
1 Co. 1st Bn. Gordon Highlanders†	" 14	" 22
1 Co. 1st Bn. Gordon Highlanders†	" 14	" 25
1 Co. 1st Bn. R. West Kent Regiment† ..	" 15	" 23
2 Co. & H.Q. 1st Bn. West Kent Regt. ..	" 16	" 23
4 Co. 1st Bn. R. West Kent Regt.	" 17	" 24 & 25
1st Bn. Royal Irish Regt.†	" 18	" 23
1 Co. 1st Bn. R. West Kent Regt.†	" 18	" 27
1 Co. 1st Bn. Royal Irish Regt.†	" 19	" 27
Naval Brigade (2nd half)†	" 19	" 12
26th Co. R.E. (2nd half)	" 19	" 11

* The embarkation of troops was retarded by the delay in the return of voyageurs from Dal.

† Embarked at Sarras.

APPENDIX 35.

(See page 131.)

CALCULATION OF RATIONS AVAILABLE AT KORTI.

"The Senior Commissariat Officer's state of supplies on the 20th instant, shows at Halfa, and south of it, about—

434,000 meat rations.

732,000 breadstuff rations.

420,000 grocery rations (mean of 6 items).

"All infantry leaving Assuan after 5th instant have brought, or will bring with them:—

40 days' groceries.

25 days' meat.

7 days' breadstuffs.

"These troops are as per margin, 4,245.*

"On the assumption of time in No. 1,† these troops will be 47 days reaching Ambukkol.

"They will therefore reduce the supplies forward by the difference between 47 days' full rations, and the supplies they bring on, viz.:—

$40 \times 4,245 = 169,800$ rations groceries.

$22 \times 4,245 = 93,390$ rations meat.

$7 \times 4,245 = 29,715$ rations breadstuffs.

"The supplies forward will further be reduced between 20th instant and 22nd January by 63 days' full rations eaten by the

* Essex	500
Cornwall's	350
Black Watch.. ..	675
Gordons	720
West Kent	750
Royal Irish	750
Camerons and details	500
Total	<u>4,245</u>

† See page 130.

troops named in the margin,* who had left Assuan before the 5th instant, and whose supply of rations, brought from Assuan is either already consumed or included in Senior Commissariat Officer's statement, or by

$$63 \times 4,360 = 274,680 \text{ rations of all kinds.}$$

"The supplies forward will further be reduced by the rations to be consumed by the troops leaving Assuan after the 5th instant between the expiration of the 47 days above counted, and the 22nd of January, as per margin,† or by

17 × 675 =	11,475	rations of all kinds.
13 × 720 =	9,360	" " "
8 × 750 =	6,000	" " "
4 × 750 =	3,000	" " "
Total	29,835	" " "

"It thus appears that from the supplies now forward there must be deducted as to be consumed by 22nd January :—

Grocery	29,715	+	274,680	+	29,835	=	334,230	rations.
Meat	93,390	+	274,680	+	29,835	=	397,905	rations.
Breadstuffs	169,800	+	274,680	+	29,835	=	474,315	rations.

"So that the Senior Commissariat Officer's balance remaining on 22nd January, date of concentration, will be :—

Grocery	420,000	—	33,400	=	86,000	rations.
Meat	434,000	—	39,800	=	36,000	rations.
Breadstuffs	732,000	—	474,000	=	258,000	rations.

* Sussex..	..	..	..	..	..	820
Stafford	..	..	..	..	..	600
Cornwall's	..	..	..	..	..	320
Essex ..	..	..	..	..	..	120
Mounted Corps	..	..	..	..	..	2,500
Total	..	..	..	..	..	4,360

† Black Watch..	..	..	..	..	..	675
Gordons	..	..	..	..	..	720
Royal Irish	..	..	..	..	..	750
West Kent	..	..	..	..	..	750

"These must be further reduced by the 63 days' rations to be eaten by the 660 R.N., R.E., voyageurs, and departmental troops, between 20th November and 22nd January, or by 41,580 rations leaving:—

Groceries, say,	45,000	rations.	
Meat	nil	"	(—5,580).
Breadstuffs	217,000	"	

(Signed) "H. BRACKENBURY, Colonel,
D.A.G."

"Headquarters, Halfa,
"25th November, 1884."

This memorandum being submitted to the Senior Commissariat Officer for his remarks, he replied:—

"I think the groceries may be taken at 470,000 rations, being the mean of the coffee and tea, as the sugar in my state of 22nd instant has been understated, and will more than cover this quantity.

"The fresh meat in the state was put down at estimated quantities now in the depôts, but at short notice could be increased. I have calculated that at least 12 days' preserved meat will be unconsumed at Ambukkol on 7th January, and should be equally so on 22nd January, as fresh meat will be available all the time."

In consequence of these remarks, Colonel Brackenbury wrote the following Supplementary Memorandum:—

"(1.) I am informed that:—

"The troops leaving Assuan since 5th November, have brought, and will bring, rations for the journey to Halfa, as well as the 40 days' groceries, &c., mentioned in my previous memo.

"(2.) I am asked to make a fresh calculation on the supposition that the Camerons and half the Royal Irish, total 850, will not come beyond Assuan, but that the 40 days' groceries, &c., for them will come on to Halfa.

"It may, therefore, be assumed that the supplies available at and beyond Halfa on 22nd January, will be—

"Increased by 10 days' rations for	4,245	troops	=	42,450
"	" 37	"	"	850
"	" 8	"	"	350
				2,800
Total				76,700

“(3.) The Senior Commissariat Officer further says that the grocery rations on 20th instant, may be taken as 470,000 instead of 420,000 which I had assumed.

“This increases the grocery rations available by 50,000.

“(4.) The remainder, on 22nd January, would, therefore, be on these conditions:—

Groceries,	45,000 + 76,700 + 50,000	= 171,700
Meat,	76,700 - 5,580	= 71,720
Breadstuffs,	217,000 + 76,700	= 293,700

“(5.) The above is, in days' supplies for 8,650 men—

Groceries	20 days
Meat	8 „
Breadstuffs	34 „

“(6.) I must add that my memorandum only says this amount of supplies will be at and beyond Halfa. Whether it will be at Ambukkol depends on whether the balance between what the troops eat at Ambukkol and on the way there, and the total amount now available, is carried up by transport independent of the troops to Ambukkol by 22nd January.

(Signed) “H. BRACKENBURY, Colonel,
“D.A.G.

Halfa,
“26th November, 1884.”

APPENDIX 36.

(See page 137.)

LIST OF THE STAFF OF THE NILE EXPEDITION, AND OF OFFICERS EMPLOYED ON SPECIAL SERVICE, 1st JAN., 1885.

Head-Quarter Staff.

Commander-in-Chief	General Lord Wolseley, G.C.B., &c.
Military Secretary	Lieut.-Col. L. V. Swaine, C.B.
Aides-de-Camp	Capt. Lord C. Beresford, R.N. (Commanding Naval Brigade). Colonel Zohrab Bey. Major F. M. Wardrop, 3rd Dragoon Guards (D.A.A.G. 17th December, 1884). Major A. G. Creagh, R.A. Lieutenant J. Adye, R.A. E. S. E. Childers, R.E.

Surgeon	Surgeon-Major W. S. Pratt.
Chief of Staff	Major-General Sir R. Buller, V.C., K.C.B., &c.
Aide-de-Camp	Lieut. Lord F. Fitzgerald, King's Royal Rifle Corps.

General Staff of Expedition.

Deputy Adjutant-General ...	Colonel H. Brackenbury, C.B., R.A.
Deputy Adjutant-General (Intelligence) ...	Colonel Sir C. Wilson, K.C.M.G. &c., R.E.
Assistant Adjutant-General ...	Colonel W. F. Butler, C.B. (for service with boats).
Assistant Quartermaster- General ...	Lieut.-Col. G. A. Furse (Director of Transport).
Assistant Adjutant-General ...	Colonel G. B. Wolseley, A.D.C. Colonel C. E. Webber, C.B. (Director of Telegraphs). Lieut.-Col. C. Grove (for service with boats). Lieut.-Col. J. Alleyne, R.A. (for service with boats).
Deputy Assistant Adjutant- General (Intelligence)	Lieut.-Col. H. E. Colville. Grenadier Guards. Major F. G. Slade, R.A. Major A. E. Turner, R.A. Capt. H. H. Kitchener, R.E. (Major E.A.). Capt. W. W. C. Verner, Rifle Brigade.
Deputy Assistant Adjutant- General	Major J. H. Sandwith, Royal Marine Light Infantry. Captain R. G. Kekewich, East Kent Regiment.
Provost Marshall and Com- mandant at Headquarters In charge of signallers	Lieut. R. H. Maxwell (Staff Captain). Lieut. F. M. Beaumont, King's Royal Rifle Corps (Staff Captain)
Commanding Royal Engineer ...	Major W. H. Mulloy, R.E.
Commanding Royal Artillery...	Major W. Hunter, Command- ing 1/1 S. Division.
Commissariat and Transport Department	Deputy Commissary-General. E. Hughes, C.M.G.
Commissariat	Assistant Commissary- General, J. T. Skinner.
Transport	Assistant Commissary- General, R. A. Nugent, C.B.

Ordnance Store Department	...	Deputy Commissary-General of Ordnance, M. J. T. Ingram.
		Assistant Commissary-General of Ordnance, T. Pease.
Pay Department	...	Colonel W. R. Olivey, C.B.
Medical Staff	...	Deputy Surgeon-General J. O'Nial.
Secretary	...	Surgeon-Major M. O'Dwyer.
Sanitary Officer	...	Surgeon-Major R. Waters.
Principal Veterinary Surgeon	...	Veterinary Surgeon W. Burt.
Senior Naval Officer	...	Captain F. Boardman, R.N.
Major-General	...	Major-General W. Earle, C.B., C.S.I.
Aide-de-Camp	...	Lieutenant J. T. St. Aubyn, Grenadier Guards.
Brigade-Major	...	Major M. C. Boyle, King's Royal Rifle Corps.
Brigadier-General	...	Brigadier-General Sir H. Stewart, K.C.B.
Aide-de-Camp	...	Captain F. W. Rhodes, Royal Dragoons.
Brigade-Major	...	Captain, the Earl of Airlie, 10th Hussars.

Line of Communications Staff.

General Officer Commanding	...	Major-General Sir E. Wood, V.C., G.C.M.G., K.C.B. (E.A.).
Aide-de-Camp	...	Lieutenant F. R. Wingate, R.A. (Major E.A.).
Brigadier-General	...	Col. and Brigadier-General F. Grenfell, Aide-de-Camp (E.A.).
Aide-de-Camp	...	Captain D. P. Chapman, South Lancashire Regiment (Major E.A.).
Colonel on Staff	...	Colonel R. Harrison, C.B., R.E.
Assistant Adjutant-General	...	Lieut.-Col. J. C. Ardagh, C.B., R.E., Commandant of Base.
		Lieut.-Col. T. Fraser, C.M.G., R.E. (Colonel E.A.).
		Lieut.-Col. J. F. Maurice, R.A.
		Colonel K. G. Henderson, h.p., commanding Assuan.

Deputy Assistant General	Adjutant-	Major E. T. H. Hutton, King's Royal Rifle Corps. Major E. A. W. S. Groves, Royal West Kent Regiment. Lieut.-Colonel F. T. Lloyd, h.p., R.A., Commanding Assiut.
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Railway Service.

Assistant Adjutant-General ...	Major Wilberforce Clarke, R.E.
Deputy Assistant General	Adjutant- Major D. A. Scott, R.E. Captain H. Yorke, R.E.

Medical Service.

Principal Medical Officer ...	Surgeon-Major G. E. Will.
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Employed on Special Service.

Colonel Hon. E. Primrose, Grenadier Guards. F. G. Burnaby, Royal Horse Guards. H. B. H. Blundell, h.p.
Lieut.-Colonel ...	... R. W. T. Gordon, Argyle and Sutherland Highlanders. H. Hallam Parr, C.M.G., Somerset Light Infantry, Colonel E.A. F. Duncan, R.A. (Colonel E.A.).
Major ...	... G. B. Martin, R.A. C. C. Smyth, Welsh Regiment. C. H. W. Tyndall, 2nd West India Regiment. Schaeffer, Egyptian Police. M. S. Crofton, South Staffordshire Regiment. J. A. Man, 3/ Gordon Highlanders. J. B. B. Dickson, Royal Dragoons. J. W. Smith, South Staffordshire Regiment.

Captain	...	...	...	J. F. Brocklehurst, Royal Horse Guards. H. Bowles, Yorkshire Regiment. H. C. Selater, R.A. H. H. Settle, R.E. (Major E.A.) H. J. Craufurd, Grenadier Guards. B. F. Holme, East Kent Regiment.
Lieutenant	...	...	...	A. J. W. Allen, East Kent Regiment. H. G. Lang, Sutherland Highlanders. E. M. Barttelot, Royal Fusiliers. W. F. Peel, 2nd Life Guards (Staff Captain). Lord Avonmore, Hampshire Regiment. D. V. Pirie, 1st Life Guards. Sir G. Arthur, Bart., 2nd Life Guards. Hon. F. Colborne, Royal Irish Regiment. C. R. Orde, Rifle Brigade. B. A. Newbury, D.C.L.I. F. Hammersley, Lancashire Fusiliers. H. St. L. Wood, East Yorkshire Regiment. H. G. Leigh, 1st Life Guards. E. C. J. Williams, East Kent Regiment. H. M. L. Rundle, R.A. (Major E.A.) F. B. de S. La Terrière, 18th Hussars (Major E.A.). C. Lysons, V.C., Royal Welsh Fusiliers (Captain E.A.) F. R. Gregson, Derbyshire Regiment (Staff Captain).
Surgeon-Major	...	...	...	J. G. Rogers (E.A.)

APPENDIX 37.

(See page 137.)

STAFF AND DISTRIBUTION OF BRITISH TROOPS IN EGYPT NOT INCLUDED
IN THE EXPEDITIONARY FORCE, 1ST JANUARY, 1885.

Lieutenant-General	...	...	Sir F. C. A. Stephenson, K.C.B.
Military Secretary	...	...	Lieut.-Colonel F. L. Campbell, Scots Guards.
Aide-de-Camp	...	...	Lieut. W. J. Myers (Acting) King's Royal Rifle Corps.
Chief of the Staff	...	...	Major-General Hon. J. C. Dormer, C.B.
Assistant Adjutant-General	...	...	Colonel C. F. Clery, C.B. h.p.
Deputy Assistant Adjutant-General	...	...	Colonel K. D. Murray, Royal Irish Fusiliers.
Temporary Deputy Assistant Adjutant-General	...	...	Captain G. S. Baynes, King's Royal Rifle Corps.
Acting Deputy Assistant Adjutant-General	...	...	Lieutenant F. A. Fortescue, King's Royal Rifle Corps.

Alexandria.

Major-General	...	...	W. O. Lennox, V.C., C.B., R.E.
Aide-de-Camp	...	...	Lieut. J. T. Cotesworth, Yorkshire Regiment.

Troops.

6/1 Sc. D., Royal Artillery.
1st Battalion Yorkshire Regiment.
 $\frac{1}{2}$ 3rd Battalion King's Royal Rifle Corps.

Cairo.

Major-General	...	...	J. Davis, C.B.
Aide-de-Camp	...	...	Lieutenant G. C. Douglas, Scottish Rifles.
Brigade Major	...	...	Lieut.-Colonel T. B. Hitchcock, Shropshire Light Infantry.

Troops.

19th Hussars.
 G/B Royal Horse Artillery.
 I/2 Royal Artillery.
 5/1 Sc. D. "
 11th Company, Royal Engineers.
 2nd East Surrey Regiment.
 1st Berkshire Regiment.

Suakin.

Major-General	...	...	A. J. Lyon-Fremantle.
Aide-de-Camp	...	...	Captain Hon. F. W. Stopford, Grenadier Guards.
Brigade Major	...	...	Lieut.-Colonel W. F. Kelly, Royal Sussex Regiment.

Troops.

17th Company Royal Engineers.
 A Battalion Royal Marine Light Infantry.

APPENDIX 38.
(See page 137.)

DISTRIBUTION OF THE EGYPTIAN ARMY ON THE 1ST OF
JANUARY, 1885.

Description.	Officers.		Non-commissioned Officers and Men.	Station.
	British.	Native.		
<i>Staff :—</i>				
Cairo	3	2		
Elsewhere	15	2	3	
<i>Infantry :—</i>				
1 battalion	2	24	451	Assuan.
5 battalions*	20	97	2,381	Halfa and south.
2 battalions	3	35	1,094	Suakin.
1 battalion .. ..	..	23	674	Cairo.
Detachment .. ..	..	2	46	Cairo.
<i>Cavalry :—</i>				
1 troop .. ..	..	5	65	Assuan.
5 troops	1	14	345	Halfa and south.
2 troops .. ..	..	7	114	Suakin.
Depôt .. ..	..	1	16	Cairo.
<i>Artillery :—</i>				
1 battery .. ..	..	5	93	Assuan.
1 " (camel)	1	4	115	Halfa and south.
1 " .. ..	..	5	107	Suakin.
1 " .. ..	..	4	86	Cairo.
<i>Other Troops :—</i>				
Camel Company	2	5	154	Halfa and south.
Detachment .. ..	..	2	49	Suakin.
<i>Medical Department :—</i>				
Detachment .. ..	..	7	19	Cairo.
Detachment	2	15	53	Assuan and south.
Detachment	1	3	10	Suakin.
Total	50	262	5,953	

The following Staff Officers of the Egyptian Army were at this time employed with the Nile Expeditionary Force :—

Major-General Sir E. Wood, V.C., &c.
 Brigadier-General Grenfell, A.D.C.
 Lieutenant-Colonel T. Fraser, C.M.G. (Colonel, E.A.).
 " F. Duncan (Colonel, E.A.).
 " H. H. Parr, C.M.G. (Colonel, E.A.).
 Major J. O. Quirk (Lieutenant-Colonel, E.A.).
 Major J. Wodehouse (Major, E.A.).
 Captain D. P. Chapman (Major, E.A.).
 " H. H. Kitchener (Major, E.A.).
 Lieutenant H. M. Rundle (Major, E.A.).
 " F. B. de S. La Terrière (Major, E.A.).
 " E. J. Stuart Wortley (Major, E.A.).
 " W. Lysons, V.C. (Captain, E.A.).
 " F. Wingate (Major, E.A.).

* Chiefly employed in assisting at the Cataracts between Wady Halfa and Abu Fatmech, in whaler convoys, and on the Sudan Railway.

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Author

Colville, H. E. Col.

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